

**Dynamic Pricing –
Can consumers achieve the
benefits they expect**

2017



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Abstract

This research sets out the possible harms to consumers from potentially exploitative pricing practices as retail business moves to more extensive use of dynamic pricing, what consumers can do to protect themselves, how aware they are of the risks, and what business and government can do to ensure consumers' rights are protected.

Keywords: dynamic pricing, discriminatory pricing, Big Data, retail, e-commerce

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I

Executive Summary

Goal

The goal of this research was to determine, within a consumer protection framework, the sources of harm to consumers from lack of awareness, misleading practices, or misuse of dynamic pricing, what consumers can do to protect themselves, and what business and government can do to ensure consumers' rights are protected.

Background

Dynamic pricing is not new. It existed long before shopkeeper John Wanamaker stuck a price sticker on a jar of beans. It's been on a comeback for decades. While previous changes were obvious, recent changes are less transparent. Technology fuelled e-commerce provides business significant opportunities to use consumer information to price products and services, often in ways consumers don't know or understand.

Businesses, some reeling from greater price transparency afforded by the Internet, may be seeking new ways to achieve pricing opaqueness.

Big data offers a gold mine of opportunity, driving many marketing and pricing decisions, and with obscure and easily bypassed privacy consent rules and practices, difficult to enforce competition regulations, a lack of consumer awareness, and consumer confusion regarding benefits and privacy, it can be easily abused.

For consumers there can be conflict and confusion. They often give up personal information, overestimating the benefit and underestimating the downstream costs. Their actions often belie their intent, as most consumers indicate they have concerns over the use of their personal information.

Methodology

This research focused primarily on consumer and expert views on how consumers can be better protected in an era of increased dynamic pricing. Multiple mixed methods of gathering evidence were used, to cover different perspectives, and to reduce chances of missing relevant information. The methodology included an initial environmental scan and literature review and two questionnaires of the Council's Public Interest Network to determine general issues and possible solutions with dynamic pricing in

the marketplace. This shaped the conduct of focus groups and development of the key informant interview guide. An online survey of a representative sample of 600 Canadians by age, location and gender was used to obtain views on the fairness of a range of 10 types of dynamic pricing, including traditional discounting, more technologically enabled supply and demand pricing, and the use of demographic and personal information to set individualized prices.

Four focus groups conducted by Environics Inc., one in each of French and English in Montreal and two in English in Toronto, gathered consumers' perspectives.

Key informants from a range of stakeholders were interviewed to bring multiple experienced perspectives to the research.

Much effort was expended to eliminate bias in the research, which yielded information evaluated in a dynamic pricing consumer protection framework.

Analysis identified business pressures and other sources of potential misused or misleading dynamic pricing practices, contributing to the development of recommendations to business, regulators, consumers, and standards organizations.

In general, as part of our research for this project, surveys, focus groups, etc., were used to assist in better understanding the perspectives of different actors involved in dynamic pricing contexts, but no generalizations should be made about the representativeness of the respondents contacted for this research.

Key Findings

| Consumer Awareness, Benefits and Harms

- Consumers have a low awareness of pricing based on behaviour or personal information. When made aware of such practices their reaction is often decidedly negative.
- They view pricing based on technology-enabled, advanced supply and demand calculations with some uncertainty. They view traditional dynamic pricing, (e.g., age/volume discounts) as fair, or at least tolerable.
- Benefits can arise from dynamic pricing for those consumers who have the time, diligence and acumen to determine the benefit, and act on it. These benefits, though, accrue more from the traditional dynamic pricing models, than technology or information enabled methods.
- Consumers will have growing uncertainty comparison-shopping online, as they may not know whether an offered price will still be available if they compare elsewhere. Furthermore, they may have no way to predict reasonably what individualized price may be offered by another seller.
- Consumers do take advantage of some market sourced solutions such as price and offer aggregators.

| Business Rationale, Practices & Barriers

- The recent significant increase in price transparency, as consumers have more price information on the Internet, has increased business interest in creating pricing opaqueness. Retailers are looking for ways to combat the impact of well-informed consumers willing to shop based on price.
- Dynamic pricing could be so attractive/profitable to retailers that they ignore it at their peril. Holding the upper hand in the application of dynamic pricing could encourage exploitation.
- Many dynamic pricing models exist, and their variants and complexity increase commensurate with increases in online shopping, big data, mobile technology and algorithms capable of significant relevant correlations.
- Practices range from traditional (senior or volume discounts, loyalty programs, price matching), to technology enabled/enhanced supply and demand (Uber Surge Prices, Amazon frequent price changes, sports tickets premium pricing) through to the use of demographic, behavioural and personal information to tailor individualized prices with a goal of profit maximization, inventory management, and/or market dominance.
- There is evidence of even so-called 'bricks-and-mortar' retailers working actively to develop ways to set price displays dynamically for goods on shelves.
- In and of themselves, such methods are typically legal, but largely invisible and sometimes misleading to consumers, particularly where behavioural, demographic or personal information is used. Businesses typically do not advertise the use of these more advanced and personally invasive methods of dynamic pricing.
- Barriers to entry exist for businesses, however. Similar businesses will typically not suffer versus a competitor, unless there is competition for the information used to make a price offer, itself. Smaller businesses, unable to collect, analyze and/or utilize such big data, may be disadvantaged relative to larger competitors, negatively affecting choice for consumers.
- Opaque algorithms, combined with the potential for data hoarding, may be an invitation for abuse, intentional or inadvertent.

| Regulatory & Standards Efforts

- Regulatory efforts are minimal, and do not address directly some of the concerns that individuals may have.
- The legality of such methods, along with consumers' varied views and actions regarding use of their personally identifying information, make it difficult to quantify harms, as they vary by industry and individual.
- Where this pricing results from a dominant position in the marketplace, the

complaints-based enforcement regime appears limited.

- Host jurisdictions for online retailers may offer varying levels of privacy protection, given the regulatory variations with the U.S. and Europe.
- At an individual consumer level, a harm or wrong may be tough to determine, and such complaints, even if they prompt investigations, often may go unresolved for a lengthy period or not at all.
- No international standard(s) exist substantively addressing dynamic pricing and its processes.

Recommendations

| For Consumers

- Determine what personal information is of concern if used to determine price offerings.
- Read Privacy Policy Statements where risk is high of personal information significantly affecting price.
- Request from businesses the personal information they have about you, and consider asking them to remove it.
- Ensure you understand the benefits you will obtain when you provide others information about yourself.
- Consider using private browsing mode where you don't want behaviour to affect your price. Beware that the nature and degree of protection vary by browser.
- Identify valid reference prices for comparing prices, particularly for significant purchases. Take screen shots of prices offered and, if a subsequent price differs, request the best price from your preferred supplier.
- If a price is more than you expect, ask how the price is set.
- Complain to the Competition Bureau if an offered price is unreasonable compared to a published one.
- When purchasing, check different sites that provide the same product or service.
- Don't solely rely on sites that aggregate and recommend best prices; compare against reference prices you establish.
- Consumers may need to develop and use some haggling skills, not necessarily an easy task.
- Take advantage of traditional dynamic pricing discounts, such as age, date or quantity-based. Plan where possible.

| For Business

Disclosure

- Disclose the use of big data for individualized price offers.

- Identify third party information used in pricing
- In Privacy Policy Statements, state clearly what information is used in pricing. List third-party or related organizations that may receive consumers' personal information for pricing.

Transaction Actions and Reference Price

- Allow consumers to hold or reserve an offered price and return to it online for comparison purposes.
- Indicate a reference price where possible, so consumers can understand the nature and degree of benefit.
- Indicate any ranges that are based on supply and demand.

Consumer Education and Involvement

- Explain where technology enables price adjustments according to supply and demand.
- Solicit consumer input on personal information components of pricing, as research has shown that this increases consumer trust. Provide elemental components used in the calculations, where possible.
- Provide non-marketing information about the benefits and commitments regarding dynamic pricing.

General

- Where prices increase with higher demand, make efforts to increase supply.
- Reasonably self-censor in terms of maximizing pricing, in the interest of the mutual benefit of long-term customer relationships.
- Where an organization takes on the role of "market maker" such as an Amazon, they should also take on the responsibilities of marketplace protection — in essence, a degree of self-regulation.

| For Regulators and Standards Organizations

Privacy

- Privacy regulators need to more rigorously enforce the concept of meaningful consent, where personal information is used in pricing.
- Privacy regulators should consider amending the Personal Information Protection and Electronic Documents Act ("PIPEDA") to require clearer indication of the use of personal information in pricing, possibly requiring a clear grid of details of personal information when used for pricing.
- Privacy regulators should consider a more structured enforcement regime, investigating retailers on a routine basis, rather than when prompted by a complaint.

Competition

- The Competition Bureau should consider a more structured enforcement regime, investigating retailers on a routine basis.
- Consider the models of compliance and enforcement in other marketplaces (e.g., stocks and commodities) as models for enforcement, given the similarities in the use of opaque algorithms.

Pricing and Consumer Protection

- Algorithms used for individualized pricing be maintained for a set period of years in auditable form and attachable to original transaction.

Consumer Education

- The Office of Consumer Affairs should produce material for consumers suggesting steps they can take to protect themselves, and questions to ask. As well, it can provide guidance to organizations about involving consumers in pricing education.
- The Office of the Privacy Commissioner can include such guidance in the plethora of educational materials it makes available.

Standards

- ISO and/or Canadian standards organizations should consider developing a Dynamic Pricing standard, which would provide principles and guidance in designing, developing, implementing, maintaining and improving an open and honest relationship with consumers for retailers using dynamic pricing. It can describe/establish best practices, and set them out against an agnostic categorization of practices. This can assist organizations, legislators and regulators to identify and remedy deficiencies in their efforts around ensuring appropriate controls on unconscionable dynamic pricing outcomes. More specifically, it can set guidance regarding the development, maintenance, auditability and retention of pricing algorithms.

II

Introduction

Definitions

For this report we define *dynamic pricing* as offering the identical/similar product or service to different customers (or groups of consumers) at different prices. Personalized or individualized pricing is a narrower form of dynamic pricing where information about an individual or inferred information about an individual is used to determine a price for a product or service for an individual. It includes the algorithmic formulation of differentiated price offers for single consumers of identical/similar products or services.

The definition of dynamic pricing, referred to as discriminatory pricing in research (Maxwell & Gabarino 2010), is an identical product sold to different consumers at different prices.¹ Wikipedia, taking a narrower view defines its goal as allowing a company to sell “goods or services over the Internet to adjust prices on the fly in response to market demands.”² It is stated similarly as “where prices respond to supply and demand pressures in real time or near-real time.” (Sahay 2007)

Dictionary definitions include:

Collins Dictionary:

“The practice of offering goods at a price that changes according to the level of demand, the type of customer, the state of the weather, etc”³

Oxford Dictionary:

“The practice of varying the price for a product or service to reflect changing market conditions, in particular the charging of a higher price at a time of greater demand.”⁴

Business.com

“A strategy in which product prices continuously adjust, sometimes in a matter of minutes, in response to real-time supply and demand.”⁵

Big data, a term used throughout this report, is defined in the Oxford Dictionary as:

“Extremely large data sets that may be analyzed computationally to reveal patterns, trends, and associations, especially relating to human behaviour and interactions.”⁶

Personal information is “information about an identifiable individual.”⁷ There must be an ability to identify the individual through the information. It can include subjective information. An Internet protocol (IP) address can be personal information if it can be traced to an individual.⁸

The Situation

The use of different prices for different people for the same product does not break any laws. Such pricing is legal. The placement of a price sticker by John Wanamaker in his Philadelphia shop in 1861⁹ was in essence a market solution. Up until then it was rare that customers knew the price of anything until they asked. As Gabriel Tarde noted, the introduction of the price sticker was a truce in the war between retailers and customers.¹⁰ In essence this market solution became a viral truce.

Retailers are increasingly using “big data” for dynamic pricing, in online and bricks and mortar environments, increasingly affecting the consumer/seller marketplace relationship pervasively. While there is evidence of increased usage and pressure on business to do so, the overall increase is difficult to quantify. There is much anecdotal evidence we note throughout this report.

Most consumers’ experience with dynamic pricing is primarily with the airline and hospitality industries, and more recently with electrical utilities with low and peak-time rates.¹¹ Retailers are thinking about and addressing the complexity, opportunities and risks of “big data” fed algorithms to set pricing. Even online retailers (Amazon)¹² are adding bricks and mortar stores with online features like constantly changing prices, and online consumer reviews.

Retailers, particularly ‘bricks and mortar’, have felt their profits wane with the Internet’s transparency of prices.¹³ The term “showrooming” entered marketers’ lexicon, to describe the behaviour of consumers who visit retailers to examine goods and then buy online, often at a lower price,¹⁴ or, in reverse, expect bricks and mortar merchants to match online pricing.

Retailers are getting advice and pressure from consultants and those with access to relevant software and data to enable the more complex methods of dynamic pricing.

“Arts Knowledge,” an arts marketing organization, notes the movement of dynamic pricing from the airlines to the arts, indicating an increase in season revenue of up to 4%, and the lack of patron complaints.¹⁵

Data science software companies prompt retailers to combat the barrier of outdated approaches to data:

“The Dynamic Pricing Engine ensures customers have a consistent, fair and accurate price experience across channels and simplifies pricing for sales reps, giving them pricing that is aligned both to the market and to corporate objectives.”¹⁶

“Telcordia tells its telecom prospects about the “benefits and challenges of implementing dynamic pricing in mobile networks and describes how, in the context of dynamic pricing, CSPs can leverage data analytics and optimization to increase revenue and profits, grow market share, reduce CAPEX, and increase customer satisfaction.”

Consumers shop online with notions of price transparency. They think, armed with mobile devices, they have access to any and all information; but they “don’t know what they

don't know". Meanwhile retailers robotize and bring artificial intelligence to the artifice of price offers. Retailers may find themselves on a collision course with consumers' expectations based on simpler price setting conventions. (e.g. supply and demand, 'lowest price is the law').

One need look no further than some enraged Uber riders who, accustomed to price regulation of taxi fares, "accuse the company of ripping off consumers when they need a ride the most: during holidays, deluges and snowstorms."¹⁷ How will personalized pricing be reconciled with public expectations about how commodity markets operate?

Consumers' experience leads them to expect prices to be discounted from a widely known benchmark price, rather than priced upward based on unknown base/reference prices. Many react negatively to frequent or real-time increases resulting from demand-based dynamic pricing, demonstrating two key issues: (1) consumer awareness of dynamic pricing is weak for other than traditional methods; and (2) the potential benefits and risks to a business pricing dynamically. Consumers facing difficulties in comparison shopping may feel frustration increase with the frequency of experiencing missed opportunities.

Big data and consumer-based technology applications, particularly on mobile, are combining to disrupt industries and economic sectors. Given consumer's desire or infatuation with dynamic pricing, particularly based on experiences of it solely as discounting, and the interest of businesses in avoiding price transparency to use the resulting marketplace inefficiency to create profits, there is ample reason to expect a clash of interests to emerge. Consumers expect a free market to ever more efficiently serve their interests, and that has been a promise of capitalist economic theory premised on competition. Consumers have grown accustomed to the idea that the invisible hand of the free market may give or take away, but will they feel the same about the hand of a Watson¹⁸ or its heirs. Could this price war become even more one sided?

And just how capable might a machine price negotiator become. Some must think 'pretty capable', given the plethora of retail and marketing consulting organizations encouraging businesses to take advantage of dynamic pricing. Such a pricing environment will be increasingly difficult to regulate based on current methods of surveillance and enforcement. The risk of mischief by businesses is high. Consumer awareness of the changes concerning price offers is low and their self-confidence as shoppers, in the face of this, is misguided – a bad combination for them.

Factors that Led Consumers Council of Canada to Conduct this Research

A list of factors led the Council to conduct this research, including:

- Comments at the Council's November 2015 *In Touch with eConsumer Protection* conference. Keynote speaker, Doug Stephens, a Canadian expert on the future of Canadian retail, highlighted the growing use, and benefits to consumers, of big data in providing personalized dynamic pricing. Participants clearly noted

concerns. Dr. Dilip Soman, a behavioural economist and professor at University of Toronto's Rotman School of Management, noted the overconfidence of consumers with smartphones, which may result in poor purchase decisions. Michael Jenkin, formerly director of the Office of Consumer Affairs and Chair of the OECD Committee on Consumer Policy, noted the lack of effort to offer consumers clear information necessary for them to make proper decisions.

- Media and anecdotal evidence of use of personal information in setting prices. For instance, in a practice now discontinued, Amazon would display different prices to consumers simultaneously, based on their view of what the market would bear. Some travel sites would direct Apple users to the more expensive "aisle", leaving the PC to the more pedestrian. Another based pricing on consumers' proximity to competitors.
- Media publicity such as around the actions of websites that track cookies and charge more to repeat visitors. Although it is important to note that the use of cookies is not always to the disadvantage of the consumer.
- Lack of consumer knowledge of retail pricing practices other than through reference prices and discounting.
- A lack of Canadian guidance on reconciliation of approaches of algorithmic pricing practices to the requirements of consumer protection and competition law and regulation concerning advertised price offers.
- The rise of the use of dynamic pricing by providers/intermediaries in 'sharing economy' marketplaces, which demonstrate many of the features of brokerage.
- The increased and spontaneous use of mobile devices to research decide purchases.
- The risk of some consumers emerging as more vulnerable in the marketplace by virtue of lack of access to dynamically offered prices.

The Consumer Interest

This research gives consumers, consumer protection groups, business, and regulatory authorities information to assist them in:

- Increasing consumer and business confidence and trust, and decreasing bad behaviour, in the marketplace.
- Setting groundwork for better business processes.
- Educating consumers.
- Considering actions toward regulation or guidance on consumer protection.

Businesses require guidance in this area.

Provincial governments are looking at dynamic pricing as an area of concern. This has been a topic of interest for the Ontario Ministry of Government and Consumer Services (OMGCS), for example.

Purchasing decisions based on 'unfairly' opaque pricing models may contribute to an

inefficient, less-productive marketplace. The sooner inefficiencies and friction caused by inappropriate use of dynamic pricing are addressed systemically, the better.

This research project's key outcomes, set out as a Consumer Protection Framework, involve the identification of possible harms to consumers if pricing practices are exploitative; what consumers can do to protect themselves; and what business and regulators and standards organizations can do to increase consumer protection.

Key Questions List

This research seeks to answer these questions:

- What are the fundamental types of dynamic pricing?
- What are the primary reasons for dynamic pricing?
- What, in the context of consumer rights, are areas of potential harm or concern for consumers?
- What are the responsibilities of consumers in mitigating and managing these potential harms?
- What is consumer awareness around the benefits and risks?
- What are the barriers and issues facing business that cause them to fail to protect consumers rights?
- Where may business exploit, intentionally or otherwise, consumers?
- What can consumers do to protect their rights?
- What can businesses do to ensure the rights of consumers?
- What can regulators do to ensure the rights of consumers?

III

Methodological Overview

Environmental Scan & Literature Review

A literature review was conducted to help define the scope and develop a fuller picture, from multiple perspectives, of the issues surrounding dynamic pricing, and its methods, best practices, rationale and regulatory environment. Published reports, research papers, consultants' websites, Internet sources, and media were examined. A broad background and view of the environment, drivers, issues, and industry players was developed.

This yielded information around harms and benefits of dynamic pricing, practices and rationale, regulatory background, barriers to business, and best practices information. This helped guide the development of two Public Interest Network questionnaires, the focus group discussion guide, the online survey questions and the key informant interview guide.

The literature review provided context to underpin this report's recommendations about how consumers can help themselves, and how business, regulators, and standards organizations can assist in protecting consumers rights.

It does not opine on the soundness of methodologies of the various research papers in our review, accepting and citing their findings and recommendations as claimed.

Public Interest Network Questionnaire

The Consumers Council of Canada's Public Interest Network (PIN) was consulted in the initial and final stages of this research. The first questionnaire was to identify issues to be explored and provide input to the development of the focus group discussion guide, key informant questioning, and online survey questions. The second was to obtain views on potential solutions.

The PIN comprises thoughtful, knowledgeable, interested and engaged Canadian consumers. Participants voluntarily self-select, registering their interest through the Council's website. They are frequently active at the community level; aware of or especially interested in consumer and public policy issues; often involved and have sometimes been influential in their communities of interest; and are more willing than most to express opinions and take a stand.

The Council considers the views of PIN members based on this context, and does not treat their views as statistically representative. Participants may be more educated with higher incomes than the general Canadian population. As active, aware, critical and informed consumers, PIN participants may offer insights into issues and current and emerging trends. The Council considers consulting PIN members useful for identifying and assessing consumer protection problems and potential solutions.

The initial questionnaire consisted of nine open-ended questions. 134 respondents opened the survey and 28 completed the first questionnaire. The second questionnaire consisted of three open-ended questions, opened by 151 respondents, 24 of whom completed it. This level of response is common, as PIN participants often self-qualify themselves for participation based on their interest or their own confidence in being able to offer useful views.¹⁹

Details of each questionnaire and notable extracted quotations are included in Appendix I.

Focus Groups

We conducted focus groups to obtain insights into consumer perceptions, awareness and behaviour regarding dynamic pricing, their understanding between the more overt and covert types, and their concerns about their significance and nature. Participation and interaction in a group setting provides information as participants make connections with others and their comments. Key to focus groups is understanding participants' reactions and their learning.

Consumers in Toronto and Montreal were asked to participate in focus groups to provide views on dynamic pricing held on January 12 and 14, 2017 in Toronto and Montreal with the assistance of Research House and Environics. Participants were selected by telephone considering their experience in online shopping and were screened to achieve a gender, income and age mix. The two Toronto groups were conducted in English. In Montreal one was conducted in English and one in French. A total of 24 participants (12 in Toronto and 12 in Montreal) were asked about their levels of awareness of dynamic pricing methods and their concerns, focusing on how to improve consumer protection through actions of consumers, business and government.

The results provided input into questions to be asked in the online survey, and discussions with some of the key informants regarding consumer attitudes, and ultimately as input into our recommendations.

The Selection Screener, Discussion Guide and participant details are included in Appendix II.

Online Consumer Survey

An online survey of 600 Canadians, generally reflecting Canada's population by age,

gender and region, was used to assess the degree to which consumers assessed the fairness of 10 dynamic pricing practices, from practices they typically know and accept through to newer big-data and demographics-based pricing methodologies, often employed without the knowledge of consumers.

Online surveys can produce very accurate results, conveniently provided by consumers and often with more honest results than speaking directly to a market researcher on the telephone. As well, more people from a broader representation can help in comparing and contrasting results. It provides greater access to those using mobile devices.

The online survey tool used makes use of the inferred demographic and location information to employ stratified sampling. Demographics are inferred from a large dataset of respondents' browser history for age, gender and geography, and matched against existing government statistical data. In our sample, 60% of respondents were male, 40% female. However, bias was removed using post-stratification weighting. This results typically in a lower root mean square error, and weight adjusted accordingly.

Every effort was made to keep the questions unbiased. Based on the results of the focus groups, and the PIN questionnaire, the questions were grouped, unknown to the participants, into three dynamic pricing groups: (1) traditional; (2) technology enabled supply and demand; and, (3) demographic, behavioural and personal information enabled. These groupings formed the basis for further analysis as they indicate the changing nature of dynamic pricing over time, and comprise distinguishable groups from a consumer perspective.

The 10-point scale used to collect responses was a ranking of 'fairness', from strongly agree to strongly disagree. All examples were based on real practices. The survey analysis treats a ranking of one, two, or three as clear conviction a practice is unfair, four, five, six, and seven indicate neutrality or ambivalence, and eight, nine or 10 indicate a practice is fair.

The order of the questions did not indicate the categories, which are:

- Traditional:
 - Senior's discount
 - Volume discount
 - Loyalty program
- Technology Enabled Supply & Demand:
 - Amazon
 - Major League Baseball
 - StubHub
 - Uber Surge Pricing
- Demographic, Behavioural and Personal Information enabled:
 - Luxury and budget hotel websites

- Travel site cookie based pricing
- Personalized pricing, based on 'willingness to pay'

The detailed questions, detail regarding participants by question, and charted results are included in Appendix III.

Key Informant Interviews

We conducted key informant interviews to obtain diverse perspectives, expertise and insights into the research questions. Eleven key informants were selected from academia, retail, regulatory, sharing economy organizations, privacy experts, and consumer advocates.

They had a varied and broad mix of knowledge and experience in the areas of privacy, consumer issues, retail, the new economies (particularly the sharing economy), regulatory matters, consumer issues, marketing and/or pricing. The discussions were based on a broad set of questions, although not each key informant was asked every question.

Key areas of questions addressed:

- Dynamic pricing rationale and methods
- Benefits
- Harms
- Consumer awareness
- How consumers can protect themselves
- Business barriers
- How business and regulators can protect consumers

The interviews were to collect evidence and insights regarding consumer risks and protections, and thoughts about options for recommendations to business, government and consumers. The focus of the interviews for the research was to ensure multiple and fair perspectives on the subject matter. One person conducted all interviews. The Interview Guide was developed based on the research questions and information gathered from the initial PIN.

See Appendix IV for details on individual Key Informants, and the detailed Key Informant Interview Guide.

Consumer Protection Framework

The research was directed toward the development of a Consumer Protection Framework. It includes recommendations, presented as sets of simple matrices, addressing consumers, businesses, and regulatory and standards bodies.

In 1962, John F. Kennedy, in a landmark speech, outlined four rights of consumers. These were:

- The right to safety

- The right to be informed
- The right to choose
- The right to be heard

In 1985, the United Nations, through the United Nations Guidelines for Consumer Protection, expanded these to eight basic rights, which with the right to privacy form the basis for the Consumers Council of Canada's focus on the rights and responsibilities of consumers.

Research by the Council addresses these nine basic rights, adding our view of a consumer's responsibilities, in the list below. In summary, six of the eight initial rights were relevant to this research, as was the right to privacy. The findings of this research address each of these six, and privacy. All rights areas are potentially bettered for most consumers by increased awareness and transparency of dynamic pricing.

Safety

The right to be protected against goods or services that are hazardous to health and life.

The responsibility to read instructions and take precautions. To take action to choose safety equipment, use products as instructed and teach safety to children

Information

The right to be given the facts needed to make an informed choice, to be protected against misleading advertising or labelling.

The responsibility to search out and use available information. To take action to read and follow labels and research before purchase.

Choice

The right to choose products and services at competitive prices with an assurance of satisfactory quality.

The responsibility to make informed and responsible choices. To take action to resist high-pressure sales and to comparison-shop.

Representation

The right to express consumer interests in the making of decisions.

The responsibility to make opinions known. To take action to join an association such as the Consumers Council to make your voice heard and to encourage others to participate.

Redress

The right to be compensated for misrepresentation, shoddy goods or unsatisfactory services.

The responsibility to fight for the quality that should be provided. Take action by complaining effectively and refusing to accept shoddy workmanship.

Consumer Education

The right to acquire the knowledge and skills necessary to be an informed consumer.

The responsibility to take advantage of consumer education opportunities. Take action by attending seminars and workshops, work to ensure consumer education takes place in schools.

Healthy Environment

The right to live and work in an environment that is neither threatening or dangerous and which permits a life of dignity and well-being.

The responsibility to minimize environmental damage through careful choice and use of consumer goods and services. Take action to reduce waste, to reuse products where possible and to recycle when possible.

Privacy

The right to privacy particularly as it applies to personal information.

The responsibility to know how information will be used and to divulge personal information when appropriate.

IV Research

Findings from the Environmental Scan and Literature Review

| e-Commerce is Both Driving and Redefining Commerce

In Canada Post's 2017 white paper, *Growing e-Commerce in Canada*, it notes that online shoppers are driving the evolution and growth of commerce. The survey of 5,000 online shoppers in Canada found the following:

- 39% of online shoppers made more than half of their purchases online, and more than a third plan to increase their online purchasing next year.
- Hyper shoppers are critical to both growth of the industry and individual businesses.
- Consumers want a better experience shopping online.
- Millennials²⁰ and their needs are diverse and complex.
- Gen-Xers²¹ have significant funds and cannot be ignored.²²

Roughly eight in 10 Americans are online shoppers. 15% buy online weekly. Those under 50, increasingly buy and research online.²³

| Dynamic Pricing is Nothing New (or is it?)

It is generally accepted²⁴ that the price sticker came into being in 1861 when John Wanamaker placed one on a product in his Oak Hill store near Philadelphia.²⁵ As pointed out by Michael Davis in his *Gabriel Tarde On Communication and Social Influence: Selected Papers*, the nineteenth century French sociologist Gabriel Tarde noted if the marketplace is war between business and consumers, then the price sticker is a truce.²⁶

Until then, prices were individually negotiated or haggled. In some ways the Industrial Revolution brought the price sticker.

In the keynote speech at the Consumers Council of Canada's November 2015 conference *InTouch with eConsumer Protection*, Doug Stephens noted, to the surprise of the audience: "Dynamic pricing is coming, although it's not really new".²⁷ Products are becoming priced by time of day or customer loyalty or what else is in the consumer's shopping cart.

"The consumer will be offered a price specific to them."²⁸ He noted the proposition that

“the price paid for something will be based on shopping habits and loyalty.”²⁹ He said it is fairer to consumers, and it is really the sticker price used today in bricks and mortar retail that is new in human history, not dynamic pricing.

| Classical Price Discrimination

In one definition price discrimination is where a product or service is sold to different people at different prices with a view to collecting the maximum amount a consumer is willing to pay.³⁰

Price discrimination, in three degrees, occurs when two or more products, or services, similar in nature, with the same marginal cost are sold to different people at different prices. All three of these definitions of price discrimination include examples of what is considered dynamic pricing.

First-degree price discrimination involves setting prices at the maximum a consumer is willing to pay. OECD notes that until the advent of big data this has been largely a “theoretical concept” and that through the use of big data it will be “better approximated”.³¹

Second-degree price discrimination allows a choice by a consumer — different prices for different versions of a product. Airline travel provides familiar examples, as do automobile dealers and computer retailers offering essentially the same product with varying options.

Third-degree discrimination is price setting on observable differences, often temporary, as in time of day or week³², or permanent, as in age. Airline ticket pricing methodology often falls into this category as well.

Price discrimination does not happen in a vacuum. It requires several factors, including:

- The seller must be able to identify separate market segments with differing price elasticities and separated by time, space or the manner/nature/condition of use.
- There cannot be seepage between the markets where a “low price” consumer can purchase and resell to a “high price” consumer.
- The seller maintains some degree of monopoly power.³³

What is generally considered dynamic pricing is price discrimination. It does not make it illegal. Such dynamic pricing, evidence of which is emerging, is allowed subject to regulation. If it is not sold above the advertised price, not false or misleading ordinary selling price representations and not bait and switch selling it does not breach Canadian Competition legislation. If proper disclosure, consent and handling regulations are met under PIPEDA it is not in breach of privacy regulation. If pricing is not based on race or ethnic origin it does not breach human rights discrimination legislation, although third degree price discrimination methods based on age are not contested.

In the United States price discrimination is illegal where price discrimination, or dynamic pricing, effects “may be substantially to lessen competition or tend to create a monopoly.”³⁴ Weiss and Mehrotra (2001) conclude that given the lack of attention given such behaviour

because of the base intent of the Robinson-Patman Act being to curtail anti-trust behaviour: “It is more likely that the large number of competitors (as well as the increasing prevalence of price comparison Web sites and shopping bots) will act as a curb on possible price discrimination.”³⁵

| **Price Transparency vs. Pricing Transparency**

Price transparency – consumer’s ability to view prices – on the Internet is now widespread. Sites like Trivago, Kayak, among others, “allow consumers to discover and compare the prices of similar products across multiple options.”³⁶ In their research (Rossi and Chintagunta 2015) concluded that gas prices dropped by 1 cent per litre with mandatory price posting – 20% of a retailer’s margin. Price transparency can be costly to a retailer, beneficial to consumers.

Pricing transparency is less defined and less often referred to in the literature, defined as transparency of the pricing process, not the final price.

Few companies offer both. Amazon demonstrates price transparency with its clear price offer to a consumer, but its pricing method remains unknown. Furthermore, a consumer does not know the durability of the price – the length of time it will be available.

Businesses fear that greater price transparency leads to profit loss. They’ve battled the Internet’s contribution to greater price transparency and valid price comparison. ‘Showrooming’, where a store may be used as a showroom by consumers who then may buy from a lower-priced seller, particularly online, has concerned bricks and mortar retailers, particularly with the advent of convenient mobile devices. Consumers check a product in store then obtain reference pricing concurrently.³⁷ Also, consumers price shop online but walk into stores seeking price matching, particularly from those with publicly stated price policies. The retailer made the sale, but must match the price of a low cost online retailer

| **Marketplace Factors to Consider**

Big Data, Its Promise, and Perils

The rise of big data has precipitated considerable research, outlining its capability to support varied and significant dynamic pricing, and its benefits and harms.

For example “Insurers can no longer ignore the promise that the algorithms driving big data will offer greater predictive accuracy than traditional statistical analysis alone.” (Swedloff, 2014). A concern identified is that its use “could lead to inefficient social and private investments, undermine risk spreading goals of insurance, and invade policyholder privacy.” Concerns include privacy invasions “unanticipated by regulators”. Its predictive power is allowing organizations to determine personal information without requesting it.³⁸

“Big Data harbours the potential for both greater societal inequality and for greater equality.” (Hacker, 2016). “One of the striking characteristics of the era of Big Data is the ability to uncover counterintuitive correlations. Therefore, it is now possible to differentiate seemingly neutral characteristics that, while unnoticed by the general public, correlate with discriminatory traits.”³⁹

This introductory paragraph of the Office of the President of the United States report *Big Data and Differential Pricing*, February 2015, (a follow-up to its 2014 report *Big Data: Seizing Opportunities, Preserving Values*) notes the potential harm:

In the marketing context, big data refers to the ability to gather large volumes of data, often from multiple sources, and use it to produce new kinds of observations, measurements and predictions about individual customers. Much of what companies learn through big data is used to design products and services that deliver more value to the individual consumer. At the same time, if sellers can accurately predict what a customer is willing to pay, they may set prices so as to capture much of the value in a given transaction, especially when they face little competition.

And in the 2014 report:

Unfortunately, “perfect personalization” also leaves room for subtle and not-so-subtle forms of discrimination in pricing, services, and opportunities..

Economics of Privacy and Pricing Personalization

Opposing views exist in the literature about the benefits to the economy of the full application of price discrimination in markets. One perspective claims it’s positive, one the opposite, and another uncertain. Research has found the benefits to buyers versus sellers, where sellers offer dynamically achieved differential pricing based on buyer behaviour, has varied but generally has been to the benefit of sellers. This research has related primarily to the economic advantages businesses have from information asymmetries they can create.

Research focused on the economic value and consequences of protecting and disclosing personal information, and on consumers’ understanding and decisions regarding the trade-offs associated with the privacy and the sharing of personal data, identified three ideas that “connect diverse insights from the literature” (Acquisti 2016):

- Characterizing a single unifying economic theory of privacy is hard, because privacy issues of economic relevance arise in widely diverse contexts.
- There are theoretical and empirical situations where the protection of privacy can both enhance, and detract from, individual and societal welfare.
- In digital economies, consumers’ ability to make informed decisions about their privacy is severely hindered, because consumers are often in a position of imperfect or asymmetric information regarding when their data is collected, for what purposes, and with what consequences.

In research on privacy, economics and price discrimination on the Internet Odlyzko (2003) found that the then rapid erosion of privacy was due to the “increasing importance of price discrimination.” And the Internet “offers not only the possibility of unprecedented privacy, but also of unprecedented loss of privacy, and so far privacy has been losing.”⁴⁰ Intrusions on privacy, it was said, allows sellers to “determine buyer’s willingness to pay.” They also noted that price discrimination “is usually regarded as desirable, since it often

increases the efficiency of the economy.”⁴¹ They clearly stated the lack of an easy resolution. They suggested one outcome would be increased activities to obfuscate price discrimination, including bundling, micro-payments and auctions.

In analyzing the economics of privacy and personal data, Acquisti concluded: “It would be futile to attempt comparing the aggregate values of personal data and privacy protection, in search of a ‘final’, definitive, and all-encompassing economic assessment of whether we need more, or less, privacy protection.” Acquisti (2010) noted privacy definitions are too varied and the value trade-offs diverse and consumers valuations are too nuanced, and suggested an economic perspective can aid in determining the balance between “information sharing and information hiding” and is in the best interest of consumers as well as society as a whole. The evidence indicates much education, awareness, privacy enhancing technologies, and solutions controlled by users is necessary, but that these alone will be insufficient for a proper privacy balance. He suggested a regulatory framework where “economics could highlight different trade-offs, technology could help achieve more desirable equilibria, and regulatory intervention could nudge the market to adopt those technologies.” He further suggested that the burden of proof of quantifying damage need not be left with the consumer; but with the data holders, “who may be requested to demonstrate why they cannot efficiently keep providing the same products and services in manners that are more protective of individual privacy”.⁴²

In researching Apple iTunes pricing, Shiller and Waldfoegel (2011) found that the profit potential for personalized pricing is significant, but that all necessary information may not be available or enough, as yet. “Bundling, nonlinear pricing, and third-degree price discrimination] cannot extract more than about a third of surplus as profits. Personalized pricing can in theory extract all surplus.”⁴³

Fuelled by speculation of price discrimination in commerce based on personal information involuntarily left online by consumers, researchers used crowd sourcing to find “demonstrated instances of products whose prices varied online depending on the location and the characteristics of prospective online buyers.” (Mikians et al 2013) “There exist several retailers that return prices for the same product that vary by 10%-30%”.⁴⁴

Acquisti (2015) found “The task of navigating those boundaries, and the consequences of mismanaging them, have grown increasingly complex and fateful in the information age, to the point that our natural instincts seem not nearly adequate.” He defined the themes in organizing his conclusions. Uncertainty and context-dependence resulted in people who can’t be relied upon to work the complex trade-offs of privacy in their own interest. The influence of organizations with a clear interest in using such privacy can play on the malleability of privacy preferences in ways that can “suppress privacy concerns” and therefore affect consumer behaviour. He concluded from a review of the research that if the goal of public policy was to protect the privacy of individuals, then disclosure and provided

information would be insufficient. “People need assistance and even protection to aid in navigating what is otherwise a very uneven playing field.”⁴⁵

On the hypothesis that “fundamental change in the way goods are priced is underway”, Shiller found that “web-browsing data, ... – variables which reflect behavior” do substantially better than demographic data in personalizing prices. (Shiller, 2014) It was found that demographics can increase profits by 0.8%, whereas using web browsing data to tailor prices can improve profits by more than 12%. In some cases the prices charged to one customer were double those charged to others.

It stated that, if personalized pricing is used, the overall effects may be:

- The increased profits to monopolies may increase “the incentives to innovate and differentiate.”
- A significant impact on privacy laws.
- Consumers may waste efforts masking themselves in an effort to be low valuation consumers.

“A related question is whether it is fair for consumers to pay different prices for the same product. There is no objective answer, but there appears to be a public near-consensus. Kahneman et al (1986) find personalized pricing was viewed as unfair by 91% of respondents.”⁴⁶

Noting that personalized pricing is not often evidenced, but often discussed, Joel Waldfogel investigated the effect of pricing of tuition fees based on observables. He found that revenue increased by 2.2% over uniform pricing with just one variable and up to 9.0% where tailoring was based on all observables.⁴⁷ (Waldfogel 2015)

In research to determine effects of price discrimination when competing firms can use personal information and consumers can opt out for a price, Montes et al (2015) show that under competition “the optimal selling strategy for the owner of consumer data consists in dealing exclusively with one firm in order to create maximal competition between the winner and the loser of data. This brings inefficiencies, and we show that policy makers should concentrate their attention on exclusivity deals rather than making it easier for consumers to protect their privacy.”⁴⁸ They argue for no monopolies on data and that it has considerable value. Furthermore, “in the monopoly case, making it easier for consumers to protect their privacy has an ambiguous effect: some consumers gain while others lose.”⁴⁹

Stevenson and Pasek (2015) investigated the relationship between an individual’s preference for personalization and their online privacy concern, their Internet use and the trust they placed in Internet firms. They found that privacy concerns “do not appear to diminish support for personalization.” Consumers prefer personalization more when the personalization seems personally beneficial and less when the benefits are vague. When consumers trust sites and use the Internet heavily, they perceive more benefit from personalization.⁵⁰

On the hypothesis that consumer groups prefer and recommend opt-in or opt-out policies, that the voluntary participation is the "favoured compromise", Koh et al (2015) compared voluntary profiling to no profiling, finding counterintuitively that "neither social welfare nor aggregate consumer surplus is necessarily higher under voluntarily profiling, and that where social welfare may be increased, it may come at the expense of consumer surplus."

Plourde (2015) found that consumers "were surprised at the extent of the collection and use of their personal information", in this case for online behavioural advertising (not pricing). They also wanted to be informed particularly within "their sphere of Privacy", and that, contrary to what sellers/providers believed to be a narrow view of personal information, what was gathered *was* personal information and subject to PIPEDA regulation.; and, given the extent of such collection and use and the weakness of opting-out mechanisms, it is doubtful that the consent obtained from consumers could ever be truly informed.⁵¹

They recommended guidelines be adapted to designate certain categories of personal information as sensitive, and that mechanisms be implemented to enable informed consent.⁵²

Shiller (2016) found that, using web browsing histories, retailers can increase their profits by more than 14%, whereas demographic information afforded only a .3% increase. He concluded that such pricing is evolving from the theoretical to the practical.⁵³

Secondary Ticket Markets

A particularly focused push for dynamic pricing is taking place in the sports industry. It's large secondary market for tickets often draws prices much higher than the stated ticket price. Therefore, major league sport franchises are drawn to dynamic pricing practices for their ticket sales.

Ticket scalping has been around, possibly longer than the price sticker. But not in the form of a systematized market made possible by the Internet and information technology to provide for direct consumer access. In the case of major league sports, a significant new development has been the formalization online of the secondary ticket market through services like StubHub.

In research to determine models for sports teams' dynamic pricing (Shapiro 2013), it was determined that the variables in ticket pricing are extensive and include "an emphasis on team and individual performance factors, ticket-related factors, and time-related factors."⁵⁴

Research on National League Football's playoff pricing (but not the true secondary ticket market) noted: "The secondary market illustrates fans' willingness to pay prices that are considerably different from the actual face value of the ticket."⁵⁵

In a test with an anonymous Major League Baseball franchise, it was found that an

optimized dynamic pricing policy would result in an increase of 14.3% in revenue. Another research paper suggested that such pricing would increase 1996 MLB pricing by \$590,000 per franchise.⁵⁶

Ticket pricing objectives include maximizing seat revenues and attendance. Lower ticket prices are sometimes offered because there are other ways to realize profits that may meet less price resistance.⁵⁷

Privacy Policy Excerpts

As part of this research, the privacy policy statements of a selection of the largest retailers operating in Canada were reviewed. The following excerpts relate to use of personal information in offers or pricing. These are subject to interpretation, and their inclusion is not evidence that the company uses such information for dynamic pricing.

Canadian Tire will “...track and analyze your purchases, other transactions, shopping patterns, account activity, and payment history for marketing analysis purposes or making promotional offers to you.”

Best Buy will “tailor our online content or in-store offerings to you based on your interactions with us and your preferences” and will:

- Track and analyze your purchases and preferences to better understand your product and service needs and eligibility;
- Market and advertise products and services;
- Communicate things like special events, promotions and surveys;
- Tailor our online content or in-store offerings to you based on your interactions with us and your preferences....

Sears Canada will “develop an understanding of your needs and eligibility for products and services and to bring you offers from Sears or its selected third party service providers-business partners (we may make our customer list available to carefully screened companies whose products or services might interest you).”

Michaels Canada will “send offers and information. Where permitted by law, provide you with customized, unsolicited offers and information about Michaels products and services through postal mail.”

The Bay says “... agreeing to the use of your personal information for additional secondary marketing purposes is entirely up to you. You may contact our Privacy Office at any time to request that we not use your personal information for marketing purposes. Secondary purposes are any purposes that are over and above the primary/operational purposes, like sending you communications that may include notifications of sales, special events, store promotions and other exclusive offers.”

Lowes Canada will “customize experiences in Lowe’s stores and online, including customized advertisements offers....”

Costco will “... provide you with customized Site content and advertising....”

*Indigo*⁵⁸ says: “Unless the purpose is self-evident due to the nature of the transaction in

question, Indigo will identify the purposes for which personal information is collected at or before the time the information is collected.”

*Loblaws*⁵⁹ says to expect it is: “Using information from these marketing, research and statistical analyses to improve or to develop new products, services, programs, promotions, contests or events, to better understand you and communicate with you as set out above.”

*Walmart*⁶⁰ says it will use personal information “to help us improve and customize our service offerings, websites, and advertising; To send you information about our products, services, and promotions...” Walmart has stated publicly that it does not use personally identifiable information for dynamic pricing.⁶¹

*Shoppers Drug Mart*⁶² says the purpose of its personal information collection is:

- Informing you about special offers and promotions or products, services, programs or events that Shoppers Drug Mart reasonably believes may be of interest to you;
- Enabling your participation in contests, promotions, surveys, chats, seminars or workshops, including contests where entry is automatic;
- Recommending particular products, services, programs, promotions, contests or events to meet your needs;
- Providing you with offers or services based on the location provided by your mobile device (also referred to as location based advertising) or based on your interests....

Staples says:

- We collect and use personal information about our customers to identify them, to communicate with them, to protect the Company and its customers against error and fraud, to understand what products and services our customers want, to provide information about our products and services to our customers, and as required or permitted by law.
- We will only collect and use personal information about our customers to identify them, to communicate with them, to protect the Company and its customers against error and fraud, to understand what products and services our customers want and to provide information about our products and services to our customers. We will not disclose any personal information concerning our customers to anyone else and we will not permit anyone else to use personal information about our customers for any purpose without the customer's consent.

*Rogers*⁶³ says it collects personal information “to understand customer requirements and make information available regarding products and services offered by Rogers and its agents, dealers and related companies...”

*Bell*⁶⁴ states its purpose for collection is:

- a) to establish and maintain responsible commercial relations with customers and to provide ongoing service;
- b) to understand customer needs and preferences, and determine eligibility for products and services;
- c) to recommend particular products & services to meet customer needs;
- d) to develop, enhance, market or provide products and services....

Competition and Business Software Marketing Driving New Business Practices

Analytics organizations, technology providers, and retail consultants have no shortage of comments and recommendations for the use of big data in dynamic pricing – personalized or otherwise.

Peter Fader, marketing professor, The Wharton School, University of Pennsylvania, believes such personalized prices don't lead to price gouging, and, rather, that it should be the norm, noting "It shouldn't be creeping... it should be exploding into retail," and that it first met with resistance when it was introduced into industry.⁶⁵

"In general, dynamic pricing can be your sure ticket to hit the market when the product is worthwhile,"⁶⁶ notes NDOT, an e-commerce technology provider, cautioning that such practices may "aggravate the end user" and/or cause chaos among consumers, who "may make negative comments".

Zilliant⁶⁷ Senior Vice President comments: "As pricing channels have grown more complex ... making sure your customers receive consistent, relevant pricing at each and every touch point has become nearly impossible. 'The Dynamic Pricing Engine' ensures customers have a consistent, fair and accurate price experience across channels and simplifies pricing for sales reps, giving them pricing that is aligned both to the market and to corporate objectives."⁶⁸

Telecordia, a supplier to mobile communications businesses, explains how businesses can "leverage data analytics and optimization to increase revenue and profits, grow market share, reduce CAPEX (capital expenditure), and increase customer satisfaction."⁶⁹

RTInsights a technology company notes Amazon is acting to remove MSRP from its listings.⁷⁰ They expect the MSRP to "disappear online and for good."⁷¹ Like others they advise business to move to real time optimization for pricing.

| A Simplified Classification of Today's Common Dynamic Pricing Models

Introduction to Methods of Dynamic Pricing

There is no shortage of classifications for 'dynamic pricing'. Yield Management. Conditional Rules Based. Rules Based. Personalized Pricing. Individual Pricing. Price Discrimination. Differential Pricing.

One organization explains it as one of four types of differential pricing tactics:

- Requiring customers to jump hurdles (coupons, rebates, sales, price match guarantees, authenticating age, purchasing history).
- Selling characteristics (discounts for volume purchases, bundles).
- Selling strategy (negotiation, metering)⁷²

Another noted that the formation factors for dynamic pricing, through research of the available literature, determine the following as a generalization, noting that there is "no one solid generally accepted classification":

1. *Customer behaviour and characteristics*: particularly the level of customers' knowledge, and whether the population is finite.
2. *Fair prices*: The "consumer's evaluation and understanding whether the difference between seller's and other party's prices is reasonable, acceptable or justifiable."

3. *Market structure*: The level of competition is a key factor.
4. *Product demand*: Including the capability of sellers to learn the changing patterns of demand.
5. *The perception of product value*: The amount and quality of information is key. A lack can affect the timing of a purchase. "... the perception of value is directly related to customers' preference and choice."
6. *Seasonality*: "Prices change and seasonal fluctuations influence some goods more."⁷³

We categorized pricing methods based on systems observable and understandable by consumers, and seen from their perspective. Based on the literature review and the initial focus groups we set out these categories used for analysis and layout of the literature review. :

1. *Traditional*: includes age, date and volume discounts, loyalty programs, traditional sales and coupons, event based pricing, bundling, good neighbour/customer discounts, geographic differences, distribution channel differences and price matching.
2. *Technology-Enabled/Fuelled Supply & Demand*: includes surge pricing, forecasted demand for entertainment, price adjustments based on competitor/market pricing, specialty secondary markets, peak electricity usage, tolling and parking.
3. *Personal Information/Behaviour/Demographics Enabled*: use of personal information to price individually, and past purchases, shopping patterns, personal behaviour, demographics to determine custom individual price.

Following are details of relevant media coverage and research findings.

Traditional

Traditional dynamic pricing gets considerable media, but seemingly less often than other dynamic pricing models this research considers. Some practices do draw media notice within this model.

One high-end food retailer in Switzerland, Migros, reversed its position on discounts, charging higher prices. to those who purchase more.⁷⁴

In introducing new premium features, Tender (the dating app) priced certain features up to four times higher for older people, those over 28. Their testing indicated that younger users "are more budget constrained and need a lower price to pull the trigger."⁷⁵

Consumers are being moved away from their safety zone of traditional dynamic pricing, which to their benefit or not, they generally accept. Even when it is to their advantage some consumers defy logic with their preferences. In 2012 the former Apple Store leader Ron Johnson took over as CEO of J.C. Penney. He replaced their "fake prices" with a new "fair and square" everyday low pricing scheme. Shoppers rebelled, as they'd come to love their discounts, fake or otherwise.⁷⁶

Online versus bricks and mortar provides some examples of differences in pricing that

can vary by context. For instance, a book seller charges full price in a retail outlet, but gives a 20% discount online. It can reflect the difference in demand or perceived value. Whereas, Walmart Canada uses geographic data to ensure that the price a consumer pays online is the same as they pay in their local Walmart, a process conducted overnight, not multiple times during the day.⁷⁷

Technology Enabled Supply & Demand

Sharing Economy Platforms

“The time has come” for expanded use of rapid price changes to match demand, noted a Digonex Technologies Inc. executive, a provider of dynamic-pricing services. “It’s one of the areas where companies, even big ones, have been making (pricing) decisions mostly on gut feel and past practice.”⁷⁸

Uber and Lyft, the two primary ride sharing organizations, both charge increased rates during peak times of demand, typically holidays and weekend nights. Amazon sellers use dynamic pricing to keep their inventories in line with demand.

These surge prices are meant to smooth out demand, not to price gouge, say experts and companies. Expanding that, in 2017 Uber advised that its food delivery program users should expect “in select cities to pay more for delivery when they order from restaurants in areas where demand is high but delivery partners are scarce.”⁷⁹

In researching Uber surge pricing (Wilson 2015) – and whether the lack of transparency of the algorithm allows artificial manipulation of prices and whether such prices are fair to customers and drivers – concerns were identified about fairness and transparency.⁸⁰

In an earlier work, Gurley (2014) noted the few (10%) of rides that are surge priced, and that Uber is transparent about its dynamic rates. It found that the supply and demand curves are highly elastic, stating that it operates the way an economics professor would expect.⁸¹

Forecast Supply and Demand – Sports Mainly

Entertainment

Disney charges from 4-20% more on busy days for entry into its theme parks. They have a stated objective to spread demand throughout the year.⁸² Universal Studios does the same at its theme park in Hollywood.⁸³ Ticketmaster in 2011 started dynamically adjusting prices of event tickets based on changes in seat supply and demand.

Airlines

Carriers long have adjusted prices for the same seat based on demand, available seats and how far ahead passengers make reservations. American Airlines was the first to employ the tactic, sometimes called “yield management,” with its so-called super-saver fares in the 1980s.⁸⁴

Sports

The Toronto Blue Jays and many other professional sports teams set different prices for the same stadium seat based on the day, the popularity of the team's opponent and myriad other factors. The San Francisco Giants were the first club to adopt dynamic pricing in 2009.⁸⁵

A Syracuse University Orange basketball executive, said: "We'll look at what games have sold traditionally and we'll look at what days of the week the games fall on, too. We really want to take a look at the data and the statistics and make decisions based on how we've looked at those numbers."⁸⁶

From the secondary standpoint, our only partner in the secondary market is Ticketmaster. So what I always warn fans is, if they go to a provider that isn't affiliated, they always run the risk of it being fraudulent tickets.

From a pricing standpoint, it's the fan's opportunity to choose what market they really want to purchase from. I'll always warn them about the secondary market. I've seen fraudulent tickets. We run into those issues a lot.⁸⁷

In deciding to implement dynamic pricing, the team could not ignore the fact secondary markets were sometimes capturing 10-30 times the formerly standardized game pricing.⁸⁸

Soft drinks

Coca Cola tried to implement temperature based prices. Consumer outrage at perceived price gouging ensued when it tried to launch vending machines with weather dependent pricing – the hotter the day, the higher the price, and, as it turned out, the more hostile the consumer.⁸⁹

Parking

Los Angeles, San Francisco and Seattle adopted dynamic pricing for parking meters, with rates that vary by city block and time of day, intending to better match the supply of spaces with demand and to maximize revenue.

In Toronto, Rover Parking allows residents with empty parking paces in prime locations to rent them, earn cash and ease a congested parking situation.

Road Tolls

In an investigative article *The Globe and Mail* noted that the City of Toronto has considered road tolling, possibly based on a flat fee, but that many consider this the wrong way to go. Martin Collier of Transport Futures, an advocacy group, said: "It's wrong to just say it's going to be \$2 all day. They have to have a dynamic price."⁹⁰ High prices at peak times have caused Californians to shift their travel patterns. There is no agreement on the benefits or effect on driving patterns.

Adaptation of consumer habits and expectations may be a key to getting road users to accept dynamic pricing.

David Levinson, a transportation analyst, professor and researcher of road pricing, told *The Globe and Mail*: "I'd view it as sort of a phased thing, and this is the first step. ... It's

much easier to move from a toll to a toll with differentiated time of day prices than it is to move from no toll to tolling.”⁹¹

Utilities

The expectation of electricity peak pricing models is to save consumers money by more evenly placing demand on electricity, leading to greater efficiency and reliability, and reduction of the environmental impact of producing electricity.⁹² Governments have supported this as public policy, seeking to avoid spending on new electricity generation capacity and address objectives related to climate change.⁹³

The Missouri Public Service Commission cites an innovative example of free energy from a wind source, after 9:00 pm when usage is lower.⁹⁴

Competitor's Price Offer Based

The upside for retailers of dynamic pricing is clear: They can, in theory, squeeze additional profits out of customers in a slim-margin business. While dynamic pricing has yet to be tested against Canada’s Competition Act, the more immediate worry is upsetting customers. Given how quickly both information and consumer outrage can spread online, discriminatory pricing could easily become a public relations nightmare.⁹⁵

Sears

Sears Canada announced that it would begin revising prices of major appliances and mattresses daily to guarantee the lowest price for customers, and is considering extending the practice into other categories.⁹⁶

Amazon

Amazon ran afoul of competition laws in 2000 in the U.S. for directing consumers to Amazon suppliers that paid them higher fees. American investigative news outlet ProPublica outlined how Amazon uses dynamic pricing to guide shoppers to resellers that pay higher reseller fees to Amazon. And buyers of simple household products often see prices that are 20% higher than the usual Amazon prices – unless, of course, they subscribe to the company’s \$100-a-year Prime service.⁹⁷

E.Leclerc

E.Leclerc, a French retailer, uses electronic shelf tags in 200 of its 600 stores, making more than 5,000 weekly price changes.

“This is not a passing fad,” the co-director of the University of Pennsylvania’s customer-analytics initiative was quoted. “It’s going to become imperative for the brick-and-mortar players to figure out how to do this.”⁹⁸

“Retailers are very much emulating where travel went five or 10 years ago,” said a spokesperson for 360pi, which collects and analyzes pricing data for retailers and brand manufacturers. “In the electronics sector on Amazon, we’ve seen a price change eight times, nine times in one day. I absolutely think it’s become more standard and the number of price

changes are increasing. I expect that trend will accelerate.”⁹⁹

Demographics, Behavioural and Personally Identifiable Information Based

A ProPublica report claimed that demographics based pricing is leading to unintentional price discrimination, in that “the *Princeton Review*¹⁰⁰ was charging different prices depending on the customer’s location.” The same course ranged from \$6,600 to \$8,400, priced highest in areas “heavily populated with Asian Americans.”¹⁰¹

Office Depot admitted they use customers’ browsing histories and locations to determine offers it sends.¹⁰²

In Northeastern University¹⁰³ research, four of 10 general merchandise websites and four of five travel websites had evidence of steering. Customers were found to be steered thorough search results to more or less expensive options based on their browser behaviour and whatever demographics could be determined.¹⁰⁴ Home Depot and Sears charged more when the consumer accessed their sites using an Android device than a desktop computer.¹⁰⁵ In 2012, Orbitz, the online travel company, admitted that it had been directing Mac users to higher priced hotel rooms than PC users.¹⁰⁶

Travelocity acknowledged that there are some mobile-only offerings that don’t show when searching from a desktop computer – an incentive to download its app. Company officials have indicated that results are not “cheaper by design”, but sometimes may be as mobile users are more often looking for places to stay at the last minute.¹⁰⁷

Mobile only deals are commonly offered, including by retailers such as Walmart, Target and Amazon in the U.S.¹⁰⁸ This could result in consumers losing out should they not download a given retailer’s app.

Such personalized pricing can erode consumer confidence, particularly where they have paid more for a product because of their postal code.

“We’ve seen some evidence of that,” (referring to targeting by postal code or whether they use Apple or PC) noted a spokesperson for 360pi. “Technology has gotten to a point where it’s enabled retailers to get a much better feel as to who is looking at which products when.”¹⁰⁹

A Wall Street Journal investigation found that Staples has offered reduced prices based on proximity of its competitors, with discounts available if the rival is within 20 miles.¹¹⁰

Safeway has explained that it takes six months of its shopping history collected from buyers in its “Just for U” program to build a profile specific to each customer.¹¹¹

A study released in 2005 by the Annenberg Public Policy Center of the University of Pennsylvania identified instances of dynamic pricing on the Internet. For example, a retail photography website charged different prices for the same product depending on whether shoppers had viewed price-comparison sites.¹¹² They found 68% of American adults who have used the Internet in the past month believe incorrectly that “a site such as Expedia or

Orbitz that compares prices on different airlines must include the lowest airline prices.”

Consumers are also vulnerable to subtle forms of exploitation online and offline.

- 64% of American adults who have used the Internet recently don’t know it’s legal for “an online store to charge different people different prices at the same time of day.”
- 72% don’t know that charities may sell their names to other charities even without permission.
- 64% don’t know that a supermarket is allowed to sell other companies information about what they buy.
- 75% believe that “When a website has a privacy policy, it means the site will not share my information with other websites and companies.”

They recommended:

1. The FTC should require the use of “Using Your Information” not the term “Privacy Policy”.
2. School systems must develop curricula that tightly integrate consumer education and media literacy.
3. The U.S. government should require retailers to disclose specifically what data they have collected, and when and how they use those data to influence interactions with them.

Annenberg “found that Americans are begging for openness in their relationships with marketers.”¹¹³

| Relevant Legislation and Regulation

Competition Enforcement

The Competition Bureau through the *Competition Act* has four civil and one criminal regime provision dealing with pricing. Those under the civil regime, and potentially applicable to dynamic pricing, include (see Appendix V):

- *false or misleading ordinary selling price* representations (74.01(2) and 74.01(3))
- *bait and switch selling* (74.04)
- *sale above advertised price* (74.05)

The criminal provision is Section 52, a general provision regarding false or misleading representations that may lead to criminal prosecution.

Certain efforts at price maintenance may draw the attention of competition enforcement.

Competition enforcement may result in the event of abuse of dominant position. Penalties may include an Administrative Monetary Penalty.

The Competition Bureau makes it clear that “regular price comparison claims have a powerful effect, because consumers seek out good deals.”¹¹⁴ Reference pricing can be important to a consumer’s purchase decision.

In 2009 the Competition Bureau removed price discrimination from the criminal pricing

provisions, instead addressing them under civil abuse of dominance provisions, to promote “innovative pricing programs” to increase “certainty for Canadian businesses.”¹¹⁵

However, in early 2017, the Competition Bureau found that HBC engaged in deceptive marketing practices by offering sleep sets at grossly inflated regular prices and then advertising deep discounts on these prices.¹¹⁶

Advertising Standards

The Canadian Code of Advertising Standards is Canada’s self regulatory “authority” for advertisers. There are no specific references to dynamic pricing, although the following areas do have applicability (see Appendix V):

Regarding accuracy and clarity “the focus is on the message, claim or representation as received” and such advertisements must not contain misleading claims or representations. They cannot omit relevant information that will cause deception or misleading advertisements. Regarding price claims: “No advertisement shall include deceptive price claims or discounts, unrealistic price comparisons or exaggerated claims as to worth or value¹¹⁷”.

Privacy Protection

The *Personal Information Protection and Electronic Documents Act* (PIPEDA) is relevant in commercial transactions related to consumers purchasing from organizations in Canada.

The purpose of PIPEDA is set out in Section 3:

The purpose of this Part is to establish, in an era in which technology increasingly facilitates the circulation and exchange of information, rules to govern the collection, use and disclosure of personal information in a manner that recognizes the right of privacy of individuals with respect to their personal information and the need of organizations to collect, use or disclose personal information for purposes that a reasonable person would consider appropriate in the circumstances.¹¹⁸

“Appropriate” purposes are further outlined in Section 5(3):

An organization may collect, use or disclose personal information only for purposes that a reasonable person would consider are appropriate in the circumstances.

PIPEDA regulates the use of personal information in commercial transactions. Schedule one applies and effectively describes all requirements, the particularly relevant parts include:

- Principle 2 – Identifying Purposes:
 - The purposes for which personal information is collected shall be identified by the organization at or before the time the information is collected.
- Principle 3 – Consent: (Excerpts)
 - The knowledge and consent of the individual are required for the collection, use, or disclosure of personal information, except where inappropriate.
 - The principle requires “knowledge and consent”. Organizations shall make a reasonable effort to ensure that the individual is advised of the purposes for which the information will be used. To make the consent meaningful, the purposes must be stated in such a manner that the individual can reasonably understand how the information will be used or disclosed.
 - The form of the consent sought by the organization may vary, depending upon the

- circumstances and the type of information. In determining the form of consent to use, organizations shall take into account the sensitivity of the information.
- In obtaining consent, the reasonable expectations of the individual are also relevant.
 - Consent shall not be obtained through deception.
 - The way in which an organization seeks consent may vary, depending on the circumstances and the type of information collected. An organization should generally seek express consent when the information is likely to be considered sensitive. Implied consent would generally be appropriate when the information is less sensitive.
- Principle 9 – Individual Access:
 - Upon request, an individual shall be informed of the existence, use, and disclosure of his or her personal information and shall be given access to that information. An individual shall be able to challenge the accuracy and completeness of the information and have it amended as appropriate.

One perspective of a Canadian privacy expert is that from Ann Cavoukian, who served as Information and Privacy Commissioner of Ontario for three terms and is now executive director of the Privacy and Big Data Institute at Ryerson University. “Canadians are protected by law from misuse of their data.... In terms of how it’s actually enforced, it’s a huge world online and the resources of the Privacy Commissioner of Canada are very limited.”¹¹⁹

Protection Against Discrimination

Under the *Canadian Human Rights Act* (1985), “the prohibited grounds of discrimination are race, national or ethnic origin, colour, religion, age, sex, sexual orientation, gender identity or expression, marital status, family status, genetic characteristics, disability and conviction for an offence for which a pardon has been granted or in respect of which a record suspension has been ordered.”

Two sections of the discriminatory practices are relevant:

- Denying someone goods, services, facilities or accommodation.
- Providing someone goods, services, facilities or accommodation in a way that treats them adversely and differently.¹²⁰

Consumer Protection

The language of provinces’ general consumer protection law, with respect to prices, false, misleading, deceptive or unconscionable representation is fairly consistent across Canada, with the exception of Nova Scotia law’s minimalist approach. This research does not nor was it intended to assess the effectiveness of protection among provinces.

Also, judicial interpretations of these laws were not considered by this research. The researchers were not legal experts and this review is intended only to lead to a general understanding of the context based on provincial law of a legal price offer.

One may observe that the principles-based approach of provincial consumer protection law with respect to fair pricing can make the assessment, pursuit or defence of a legal position with respect to these matters time consuming and costly. The approach assumes a

fair basis for *competition between buyer and seller* is the ideal economic state, with the law addressing mostly competitive inefficiency or dishonesty.

As a result of the complexity and time consuming nature of resolving unfairness in modestly valued transactions, civil prosecution in these matters frequently defaults to class action. Also, Alberta provides for consumer groups/associations being able to pursue actions on behalf of collections of individual consumers, but reduces the likelihood of such action by creating a costs risk for plaintiff organizations. This research did not consider the extent to which consumer groups in Alberta might use or have used this provision.

Among the examples of what most province's laws would consider false, misleading or deceptive representations are representations:

- a specific price advantage exists, *if it does not*.
- a representation using exaggeration, innuendo or *ambiguity*
- a representation that *misrepresents the purpose or intent* or any solicitation of or any communication with a consumer

Merchants and regulators may wish to consider whether presentations (user interface or algorithmic model) for delivering price offers may imply a price advantage that does not exist, creates an ambiguity regarding reference prices, or misrepresents the purpose of an online retailer's website as a free market.

An *unconscionable* representation is characterized commonly in provincial consumer protection law as exploiting disability, illiteracy, ignorance or the inability to understand an agreement.

Consumer protection law often prohibits offering a price that grossly exceeds the price at which similar goods or services are readily available to like consumers, perhaps based on the consumer being unable to receive much benefit from the representation surrounding the product, and such that a consumer might enter into a one-sided agreement to purchase. It intends to protect consumers from circumstances where a consumer might feel under pressure to buy.

These conditions of representation seem comprehensive in intent and, for better or worse, appear open to interpretation.

A price offer may be made on the basis of a claim of affiliation or association. An *unfair practice* is considered to result from a false, misleading or deceptive representation. This could include that the goods or services have sponsorship, approval, performance characteristics, accessories, uses, ingredients, benefits or qualities they do not have, or that supplier of the goods or services has sponsorship, approval, status, affiliation or connection the person does not have.

Any or all of these characteristics might be part of a dynamically presented price offer, and need to be considered for accuracy and clarity of presentation alone or in combination so as not to lead to misrepresentation.

While price gouging does not necessarily contravene the Competition Act, some provinces have legislation that prohibits the retail sale of products during emergencies at prices higher than charged before the situation, notably in Ontario¹²¹ and Alberta.¹²²

The introduction in some provinces of laws governing the preservation of value in rewards programs, if expanded out to all the provinces, is changing the durability if not the tangibility of this form of discounting, although consumers still must rely upon the general provisions of consumer protection against misrepresentation as they consider the influence of these programs on their price decisions and attempt to understand their value.

Some provinces set the reasonable bounds for deviation from a price “estimate,” which amounts to a pre-sale price offer. The value of these protections is extinguished as soon as a consumer accepts an offer outside these bounds and completes a purchase.

These laws protect consumers’ right to the reasonable availability of goods to support a price offer and if inventory is *limited*, they’ll be informed. Specific consideration is not given in law to price offers that could lead consumers to conclude supply is limited when it is actually abundant, beyond the general provisions concerning misrepresentation.

Quebec law prohibits the presentation of a “false” reference price in the context of a price offer.

Notably the provinces have various approaches to regulating event ticket sales, from preventing or restricting price on resale to price controls on secondary markets.

Findings from the Public Interest Network Questionnaire

| Summary of Responses of First PIN Questionnaire

What is Dynamic Pricing?

The PIN questionnaire respondents saw dynamic pricing as pricing based on:

- Supply and demand based on current market conditions, or on expected market conditions
- Consumers’ perceived ability to pay
- Personal buying and behavioural habits, sometimes based on adaptable algorithms
- Loyalty or previous purchases or buying volume
- Cookies when purchasing online, particularly for travel related purchases
- Something other than the cost to produce or provide the goods or services
- Time of day

Most saw it as supply and demand based. Few saw it as based on personal behaviour or attributes, and, if so, cited the travel industry, referencing the use of browser cookies.

Many saw it as confusing or unfair to consumers. Few saw it as advantageous to consumers, using terms such as “outrageous”, “cheating”, “unfair”, “targeted”, “too good to be true”, “not revealing hidden costs”, “captive market”, “trapped” and “discretionary and discriminatory”.

Few references were to traditional sales, discounts or loyalty programs.

Benefits of Dynamic Pricing

Benefits can be significant, but are more difficult to identify than the costs. They can result in lower prices, but only for those aware of the discounts and with the time, flexibility, volume or size of purchase, or opportunity to exploit them.

Some recognized that overall prices based on willingness to pay may be economically better overall, as people perceive they get better value, but it may not be practical.

Harms of Dynamic Pricing

In general, the harms identified were:

- Lack of pricing transparency, and difficult to determine. If consumers can't compare other price offers, they are disadvantaged. Dynamic pricing methods may leave consumers less informed and unable to make optimal purchase decisions.
- People end up paying more because big data enables price discrimination, and, as one said, "opens the door to usury."
- A lack of predictability for consumers.
- Consumers who don't or can't plan ahead are disadvantaged.
- In some services scenarios, consumers may find their choice limited, in that prices may be higher at the only times a family is available, say to attend a Saturday baseball game.

Use of Personal Information in Dynamic Pricing

Many expressed significant concerns about the use of personal information:

- Many were offended, some saw it as a breach of privacy, and some thought it illegal.
- It was noted it can be efficient if people pay prices that are appropriate for them, but not entirely practical.
- There was a greater concern of consumers having to pay more based on their need, and not a willingness to pay more because they see a greater value.

No clear examples of personalized pricing were offered. There was significant content conjecture and anecdotal evidence of such behaviour primarily in the travel and vacation industry, particularly by airlines in that fares can change based on your history, as well as some concerns that Amazon makes offers based on past history, but no strong suggestion that the price varied based on willingness or ability to pay.

Few respondents noted specific industries of concern. They acknowledged the complexity of airline and travel pricing, and were overall more concerned about personal information being used for marketing than pricing.

What Consumers Can Do?

The limited suggestions included:

- Consumers pursuing additional price comparison, could use different browsers, or

block cookies. They felt they should be able to shop anonymously, to be unknown; that a merchant is not entitled to know who they are.

- Nothing – accept it.
- Demand to know how price was determined.
- Limit personal information provided.
- A clear policy of guarding your personal information.

How Business Can Be More Transparent

Suggestions included:

- Inform consumers that they price dynamically, including how they do it.
- Requiring that best prices offered are guaranteed for a period before or after the transaction.
- Make clearer the consent required for the use of personal information.
- Look to regulatory models used to achieve fairness in commodities trading, suggesting that this marketplace is similar.

What Government Can Do?

A variety of solutions were suggested:

- One cynically noted that there are already many unenforced consumer protection laws. Others suggested stronger disclosure rules.
- Consumer protection laws be re-evaluated in light of a new marketplace.
- Market surveillance and enforcement methods for pricing irregularities used by commodities and securities markets might be considered.
- Making consumer protection information more accessible, including how complaints can be filed. Education was identified as a key regulatory initiative.
- Requiring disclosure of pricing practices, with clear reporting of recent high and low prices.
- Make clear a 30-day no-fault return and cooling-off clause, so consumers who determine later there was an issue with the purchase, can get their money back.

| Summary of Responses of Second PIN Questionnaire

Making the Use of Demographic Information More Transparent

Respondents were fairly consistently opposed to dynamic pricing, and thought that the general pricing methodology should be made known to the consumer. Some expressed concern regarding the privacy aspects of some dynamic pricing methodologies, and the role the Office of the Privacy Commissioner should play in protecting consumers. Specific suggestions included a notice at the checkout counter, or on-product notices about the determination of price. One noted that, in addition to the method of calculation, a rationale for a consumer's personalized price may be necessary.

Making the Use of Personal Information More Transparent

Responses were similar to that of the prior question. Most would prefer no dynamic pricing, but where it is in place, suggestions included clear pricing, the ability for consumers to indicate their specific preferences for type of pricing. One noted that it should be banned through legislation. The negative response to the use of personal information was clearly stronger than that for the use of demographic information.

How Privacy Policy Notices Can Be Improved

“A very explicit warning in great big letters should be posted in every store entrance where this is done. It should state specifically what data is collected, from what sources, and precisely when and how it is used. And the fines for errors or omissions should be sufficiently draconian to prevent recidivism. I find it downright creepy and a major sign of social disintegration.”¹²³

Respondents generally indicated that where dynamic pricing is legal, and cannot be stopped, prominent warnings about the practice should be provided clearly and upfront to consumers, and the notices should be specific, unlike current generalized presentations in privacy policy notices.

Findings from the Focus Groups

| Summary

Participants identified many examples, including scenarios based on supply and demand and fixed conditions and rules. Anglophone participants were more likely to accept dynamic pricing, particularly pricing fluctuations offered online, as normal. Francophone participants, however, expressed concerns about the societal impacts it may have on consumers.¹²⁴

Many participants knew their personal information is collected when they browse online, and recognized that they sometimes benefit from being shown particular prices based on their personal characteristics. However, participants expressed higher levels of opposition to scenarios where they would be unaware that their personal information is used, based on how often they view an item online, or on the type of device they use.

Participants were most likely to advocate for transparency. They wanted vendors to say how their personal information is used to set prices, and for regulatory bodies to stop pricing practices where the consumer has no awareness of or control over how prices are set.

| General Awareness

Participants were generally experienced making online purchases, including of clothing, shoes, travel, event tickets, electronics and other household goods. All participants browsed online for items, and some made the decision in-store rather than online.

Few were familiar with the term dynamic pricing, although some were able to offer examples such as “surge pricing” for Uber and variable pricing for airfares, concert tickets,

online retail, food and gasoline. Comments were made concerning:

- *Airfare*: Some noted prices varied significantly depending on many factors. Many described flight prices suddenly change, pleased if the price dropped and unhappy if it rose.
- *Event tickets*: Many noted significant ticket price changes in a secondary market, particularly ones in great demand. Many were concerned, that shortages of tickets were artificially created by automated computer programs “purchasing” and reselling event tickets.
- *Online retailing*: Participants noted that prices of online retailers such as Amazon fluctuated frequently based on availability and what competitors charge. Participants noted that online changes happen faster.
- *Surge pricing*: Uber’s pricing structure was positively and negatively contrasted with taxis —noting that Uber is typically cheaper than a taxi, but that surge pricing creates a “gamble” whereas taxi prices, being regulated, were stable and more predictable.
- *“Quantity” pricing on food*: Many noted food prices can vary depending on the quantity purchased. Some expressed frustration that this encourages consumers to buy more items than they need, having done it themselves.
- *“Expiry” pricing on food*: Commonly noted as a way retailers often lower prices.
- *Fuel prices*: Many participants cited fluctuation of gas prices around holidays and travel times.

Generally, participants accepted these practices as part of the marketplace. However, some felt that shifting prices made it difficult to evaluate the true value of products. Other significant concerns included spending too much on sale items, the degree of transparency in how prices are set, and the amount of personal information collected,

| Revenue Management vs. Rules-based Pricing

In our initial literature review, revenue management and rules based pricing were noted as common ways to delineate dynamic pricing. Our initial questions followed this structure. When these concepts were explained to focus group participants, they did not generally see a difference between the two, but were familiar with many of the examples.

Participants saw the benefits from both types of discounted pricing in the event of high supply or when they could buy at “the right time”. They saw it as problematic when consumers have no choice but to purchase an item at a particular time, or when demand is “stoked” due to a limited supply. In these cases, participants want transparency on factors that guide pricing.

| Dynamic Pricing Based on Personal Information

Participants received four hypothetical examples of dynamic pricing methods that used

consumer's personal or behavioural information and asked to describe the benefits and drawbacks and to identify what could be done to achieve consumer protection.

Example: Variable Hotel Pricing For Apple iOS vs. Windows Users

A travel website showing higher-priced hotels to those using an Apple operating system than those who use a Windows operating system, because research has shown Mac owners have different preferences.

Participants' concerns varied. Toronto participants tended to be more accepting. Montreal participants saw it as discriminatory, particularly against Apple users with lower incomes (e.g. students); yet, some saw benefits in products/services appropriately tailored to consumer desires/wants.

Many felt that there was little a consumer could do and that "checks" on such behaviour would be the responsibility of government, or should come through consumer education.

Example: Frequent Flyer Pricing

Where airlines are seen to charge frequent flyers higher prices than others, based on the rationale that those who fly often will pay a higher price because they need to travel, and often because a business pays for the price of their ticket.

Views were mixed. Some felt that business travellers who pay higher prices for air travel subsidize the cost for others who typically pay for their own flights. Others saw this as an unfair practice. Again, most participants felt that it would be difficult to protect against this practice.

Example: Increasing Airfares for "Interested" Travellers

An airline or travel site increases the price of a flight if someone has previously checked to see how much the flight cost.

Previously participants identified increases in airfares as acceptable examples of dynamic pricing as it was supply and demand based.

When told that this method might reference a browser history and the frequency at which the browser user viewed the flight listing online, most thought it unfair. Many thought it an example of airlines manufacturing the perception of high demand for specific flights. And there was a lack of transparency. Some noted that consumers could clear their browser history when looking at flights, but most felt the practice should be disallowed.

Example: Geographic Pricing

A consumer is presented with a cheaper price online than someone who lives further away from a bricks and mortar store operated by the online retail site of the store operator, based on the presumption that someone who lives nearby will be more enticed to go to the store to purchase this item if the price is low.

Some were confused as to how it would work in practice, but typically did not feel it was unfair. Many offered examples of how retailers offer such prices and often saw them as beneficial.

| Linguistic/Cultural Differences

In the English-speaking groups, many thought that such pricing is an accepted (but not necessarily preferred) practice, and can sometimes benefit consumers. French-speakers were less accepting and raised more concerns, including:

- Constant sales, last chance discounts and “losing out on an opportunity” may increase impulsive spending, and stress and anxiety among consumers. They suggested pricing was a ‘game’.
- That the disadvantaged (those with low online access, computer literacy, or lower incomes) are more “at risk”.
- Lack of transparency and distrust of business was more pronounced, and that businesses hold the advantages in this scenario, because only they know what the rules are.

| Policy Responses

When asked to identify what government agencies and regulators can do to protect consumers most were unable to identify specific regulatory stakeholders.

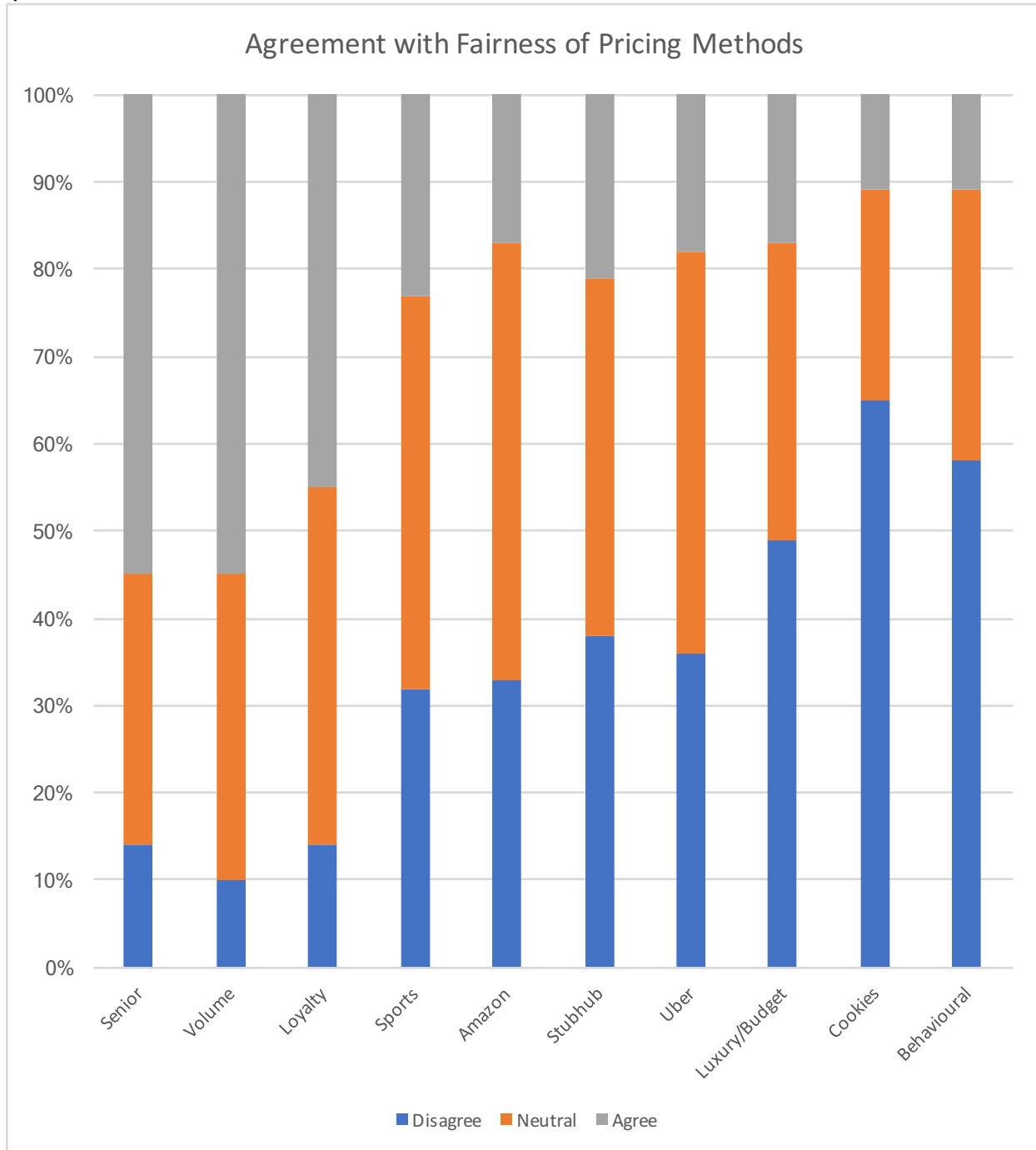
What most wanted was transparency about the factors that influence dynamic pricing. Most participants supported banning the most egregious examples of using personal information, such as raising airfare prices based on cookies, or charging users of specific devices/operating systems more money for the same product/service, assuming they are more willing or able to pay.

Participants wanted companies to be required to explain in plain language that consumer information may be used to set pricing.

It's worth repeating that most participants were surprised and dismayed to learn about some of the pricing practices based on personal information and supported more education about how consumers can protect themselves.

Findings from the Online Survey

| The Numbers in Summary from the Survey



| Summary Overall

The survey questions and a summary of the responses follows: (See Appendix IV) for detailed responses. For our summaries of the 10 point scale we include 1-3 in Disagree with

Fairness, 4-7 in neutral/ambivalent, and 8-10 in Agree with Fairness.

In the analysis of individual pricing methods below we refer at times to amounts in just the Strongly Disagree or the Strongly Agree categories. These are results where individuals responded either Strongly Agree or Disagree and selected either 1 or 10 on the survey.

Traditional

Seniors' Discounts

An auto repair shop gives senior citizens a 15% discount during slower times of the week.

55% of respondents agree with the fairness of the practice, and less than 15% viewed this as unfair pricing.

Volume/Quantity Discount

A grocery store gives any customer a quantity discount on most products.

Few respondents saw this as an unfair practice, only 10% disagreed to any extent with its fairness, while 54% had basic agreement as to its fairness.

Loyalty Card Holder Discounts

A pharmacy provides pricing discounts on a variety of products to Loyalty Card holders.

Only 15% of respondents considered it unfair, 45% thought it fair and 40% were neutral.

Data Online Technology-enabled Supply and Demand

Premium Pricing for Sports

The local Major League Baseball team charges higher prices for games against the better/league-leading and more popular teams.

The response with the most respondents was at 16% of those who strongly agree. The remainder had 45% in neutral responses with a fairly even distribution among the remainder. No clear pattern emerged, other than the similar response to Uber where there is a small but significant group with a strongly negative view.

Competitor Based Pricing

Amazon throughout the day modifies prices based on competitors' pricing. Different customers can get different prices within seconds of one another.

While 33% of respondents saw this as largely unfair, the largest proportion fell within the four middle neutral responses, approximately 50% of respondents.

Secondary Sports Tickets Market

The website StubHub allows individuals to resell sports and entertainment tickets at whatever price the market will bear.

The single largest response was 22% of respondents strongly disagreed with the fairness of such practices. 40% responded neutrally and the remainder were evenly distributed.

Data Online Demographic/Behavioural/Personal Information

Same Product, Different Price on Different Sites

A hotel chain will sell the identical room at different prices on two different sites – one a

luxury hotel website, one a budget website.

While 27% of respondents disagreed strongly with the fairness of this practice, only 17% indicated any degree of agreement.

Browser Behaviour Pricing

A travel site tracks web browser cookies & raises prices for those visiting a 2nd or 3rd time, assuming they have a higher interest in purchasing.

In clearly the largest proportion of respondents to any of the 10 questions, 41% strongly disagreed with the fairness of this practice, 65% disagreed at least somewhat with its fairness.

Behaviour and Preference Based Pricing

A retail store charges a higher or lower price based on what they think a consumer will pay, based on the individual's purchase history and/or preferences.

While 35% of respondents disagreed strongly with the fairness of this practice, only 11% indicated any degree of agreement.

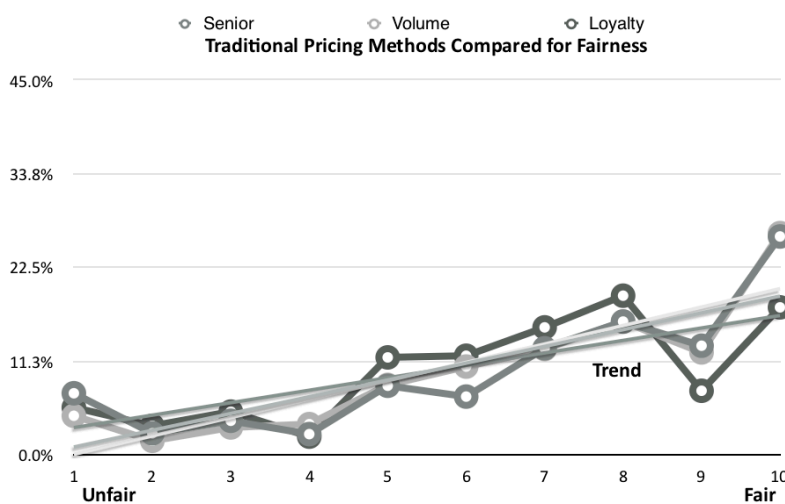
Summary Regarding Gender

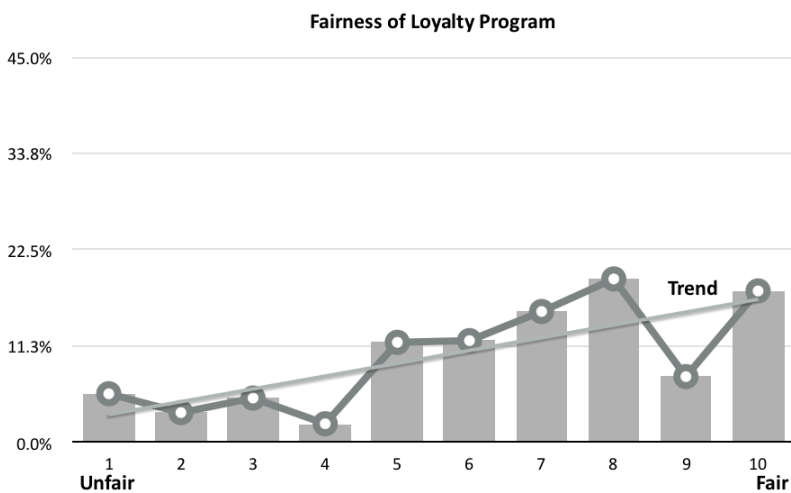
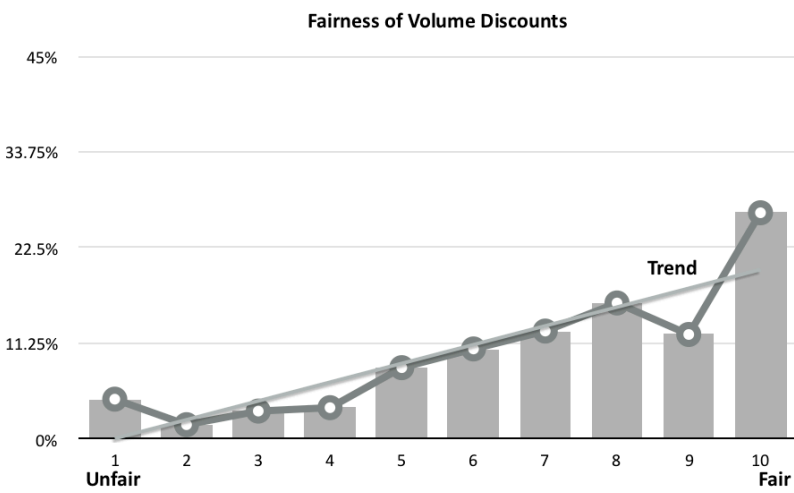
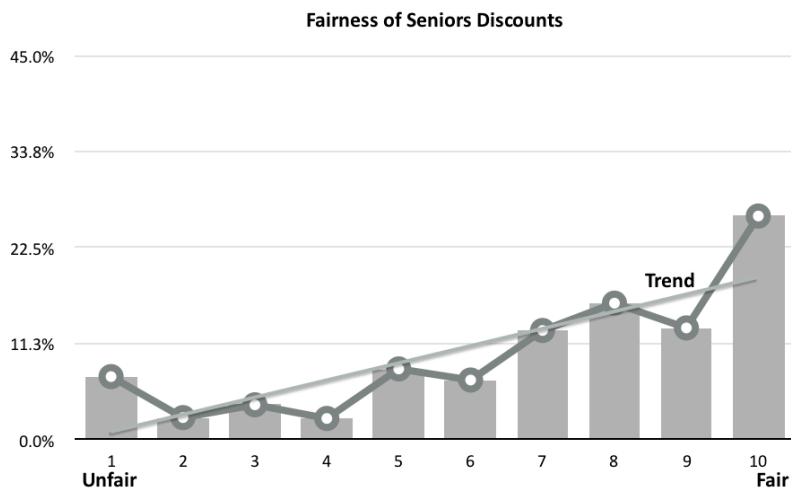
In general women were more likely than men to disagree with the fairness of these dynamic pricing practices. There were three notable exceptions to this, all of which were those that received a stronger fairness assessment from respondents overall, those relating to loyalty programs, seniors discounts and quantity discounts. These discounts are all ones likely to be considered more familiar, transparent, and calculable.

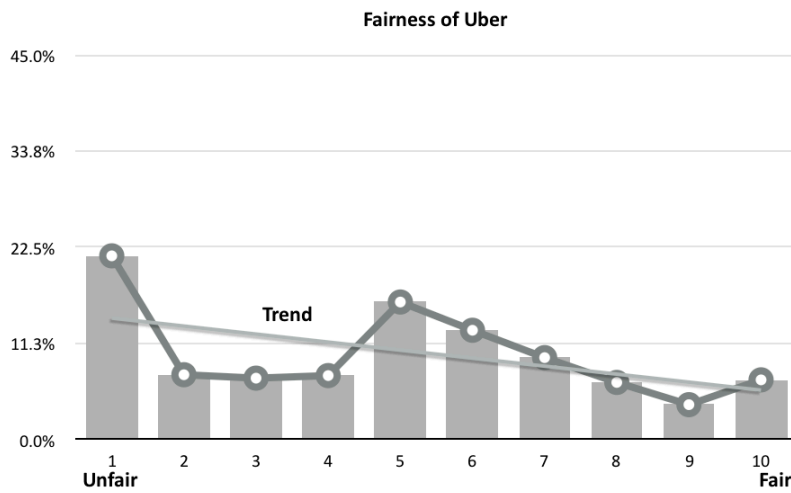
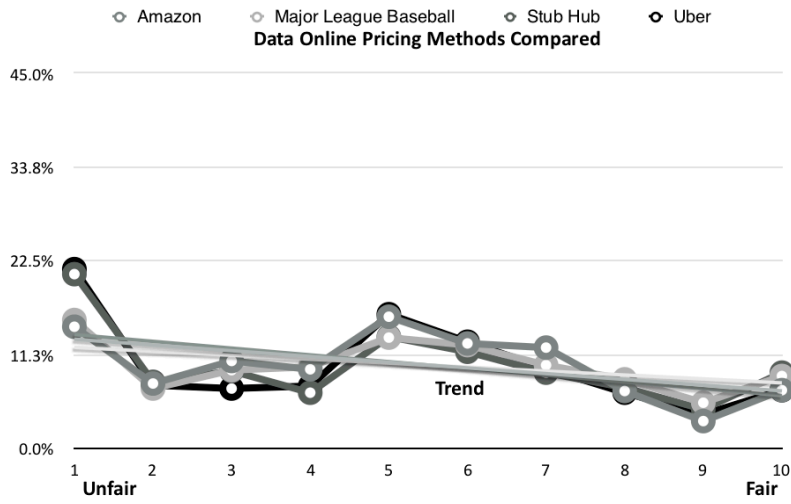
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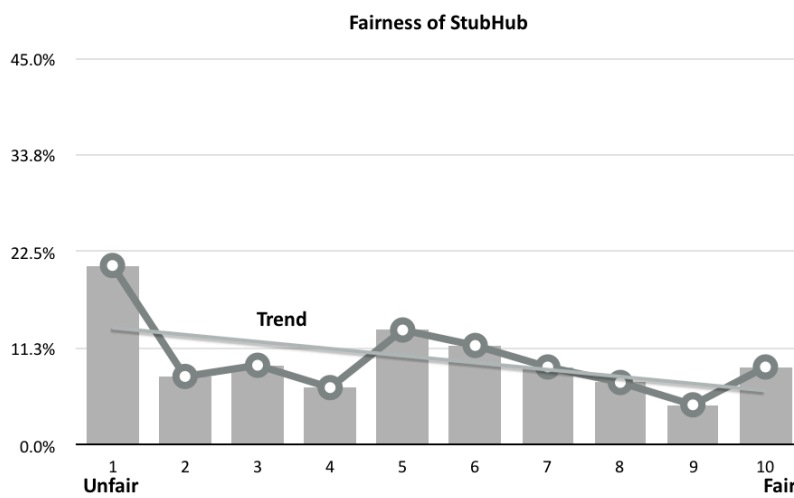
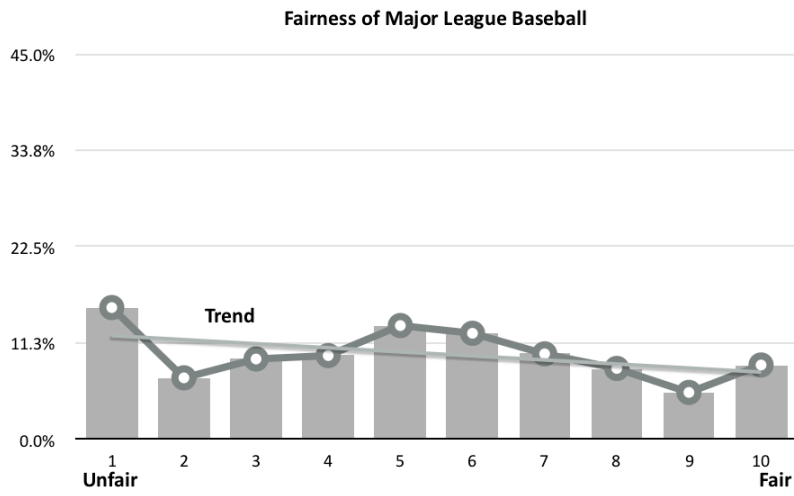
In general, older respondents were less likely to agree that dynamic pricing is fair than younger respondents. Further research would need to be done to understand the nuances of these responses.

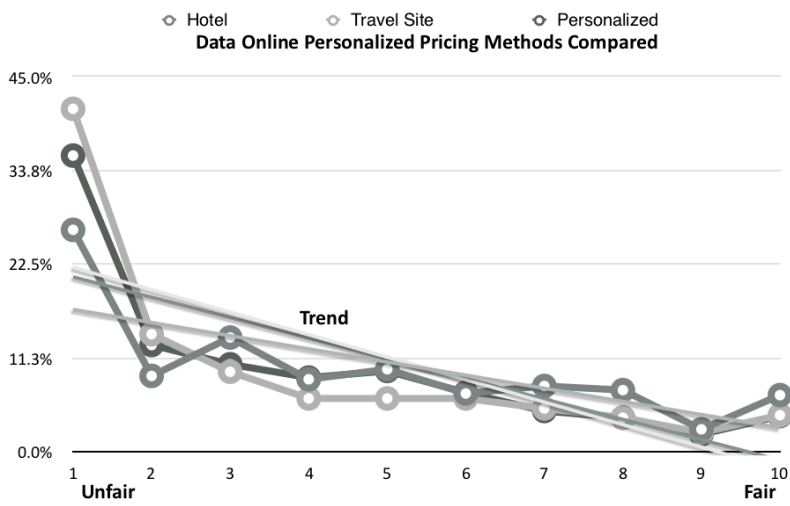
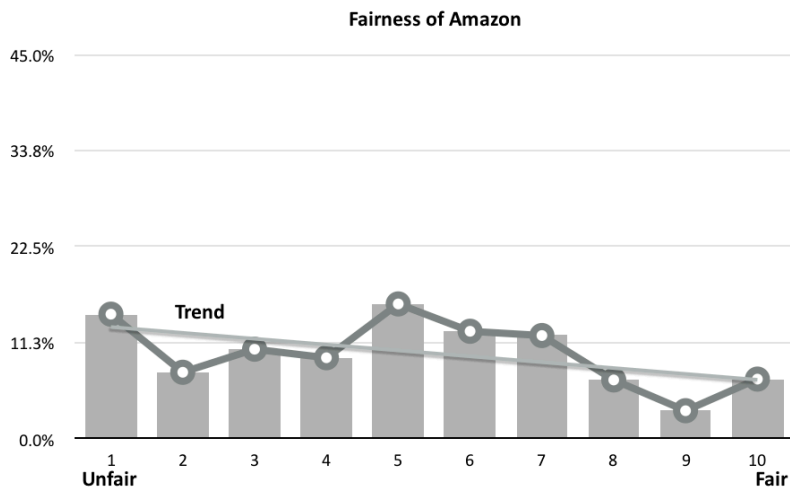
| Survey Data Charts

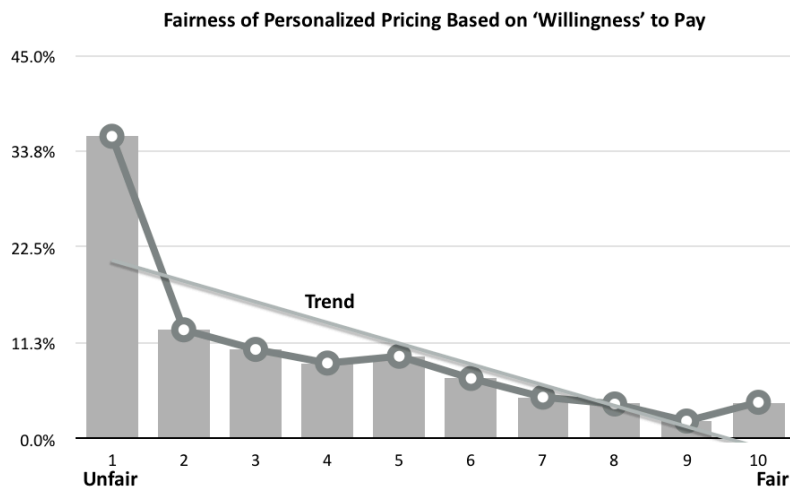
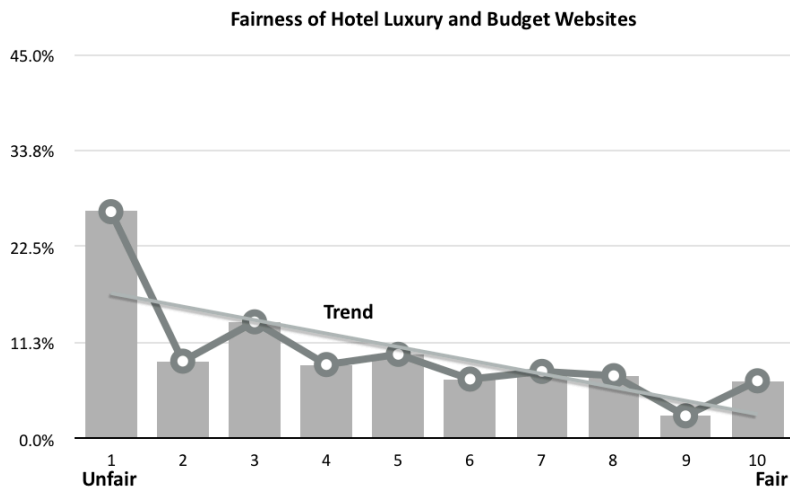




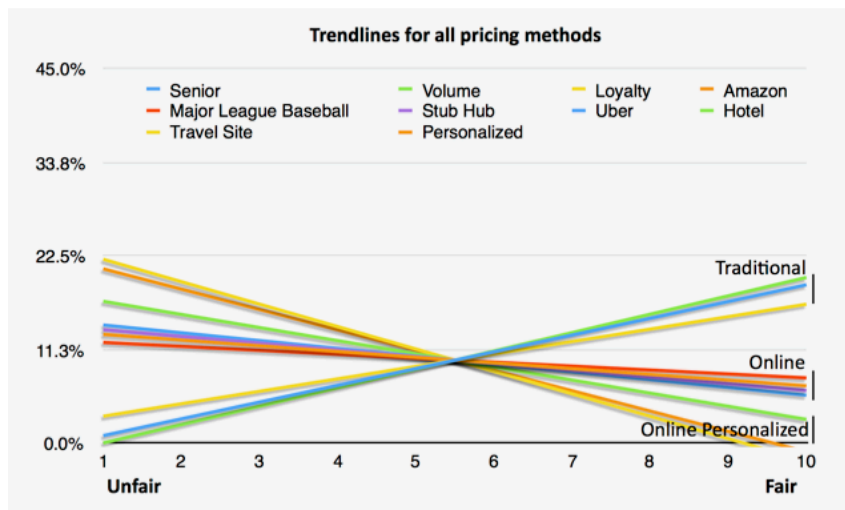








Summary Linear Regression of Survey Questions



Findings from the Key Informant Interviews

The text below summarizes the observations and views of the key informants.

| Traditional Dynamic Pricing

There has been traditional and emerging demographic, behavioural and personal information enabled dynamic pricing for longer than many consumers would consider. Price matching and coupons many consumers have long engaged and accepted.

In some retail settings, salespeople today 'size-up' customers and offer them prices accordingly. An example can be found in the price offer practices of new and used automobile dealers, among others.

People are used to dynamic pricing, particularly with the airline industry, often misattributing different prices as based on different people rather than differing features or quality.

Loyalty programs such as Aeroplan have caused difficulties for some members, as they can now only access the program electronically, in some cases causing loss of access, as they are not familiar with electronic access.

Many consumers are more comfortable with discrimination they perceive as favouring rather than disfavouring them.

| Privacy

Key informants have varying opinions about whether dynamic pricing practices present fundamentally as a privacy (or data protection) problem, many stating it is a pricing problem foremost.

Consumers seldom read privacy policy notices, so consumers typically remain unaware, even if informed. Current privacy policy statements were not generally considered a good

way to convey appropriate information, even if many recommended changes to disclosure are made. More disclosure isn't always the answer. One noted that increased disclosure can cause consumers to be overly concerned, even when they have more relevant information. Furthermore, the privacy regime may not be easily scaled to address the scale achieved by modern data processing.

They noted that consumers are concerned about controlling their privacy. But there was little consistency about what and when consumers will share their information and what constitutes appropriate, automatic sharing of information. Views around this seemed confused and debatable.

Consumers want more choice in the information they share, and have made this known to the Office of the Privacy Commissioner. Despite general agreement among the key informants that existing privacy law and regulations are not typically breached by dynamic pricing practices, many suggested it may be a good place to start the examination of consumers' dynamic pricing concerns. Some noted issues related to disclosure of use of personal information to set price offers, as well as the difficulty in gathering 'meaningful consent'.

One academic suggested revamping privacy policy statement requirements, particularly around consent, to focus more on conveyance of social benefits, and not just data privacy and protection. They asked whether organizations really understand their customers and how privacy policy notices can be used more as a transparency tool. Another suggested that such policies are in effect warranties, and perhaps should be more clearly noted as such.

| Consumer Confusion

Key informants noted neither consumers nor the marketplace like uncertainty, a common result of dynamic pricing. This uncertainty to consumers appears at present to pose no barrier to business adoption (despite the recognition of risk businesses typically show concerning the introduction of uncertainty into markets).

As one key informant noted it's a spectrum. It goes from one end where it is "something that's very static, very transparent, very predictable but doesn't give you a lot of choice or advantage, right over to the other side, which is totally unpredictable, totally non-transparent and where there is tremendous choice and opportunity," (Jenkin) noting that this end of the spectrum can be difficult to navigate and the benefit of the outcome may be uncertain and fraught with risk for the consumer.

Consumers say they want/need one thing. Then they do the opposite. Their incongruent behaviour may reflect confusion, inconsistent beliefs or lack of choices aligned with their wants and needs. They want to learn/know that they have entered into a reasonable relationship with a vendor, often don't, and despite this continue with transactions feeling they have no choice.

Uncertainty arises from a complex marketplace, particularly around choice and privacy,

exacerbating the uncertainty around the use of dynamic pricing (whether it is used, how it is used and the individual effect of that).

Consumers can shy away from the transaction, possibly to their detriment when this uncertainty reaches a sufficient level.

Privacy policy statements are not enough as they stand today to quell this uncertainty, despite apparently and generally meeting the legal requirements for the notice of use and consent, in particular.

| Consumer Behaviours

Most suggest that consumer behaviour regarding consenting to the use of their personal information varies considerably. Some said the availability of larger datasets about consumers and their behaviour are causing reconsideration of traditional assumptions about consumer motivation, and those who can exploit it get a significant edge.

Most agree that consumers do eventually, when knowledgeable, see the benefit in the use of their information when there is a reasonable relationship with the organization. But most consumers don't yet understand the possible pros and cons, most particularly the use of their personal information or their behaviour or demographic information to set personalized pricing.

Consumers have focused most on nuisances created by marketing uses of big data rather than the benefits in general of more relevant products and services and higher product or service availability, given that they may be willing to pay more, or the potential for harm in the case of some dynamic pricing methods. One key informant, focused on business interests, noted that consumer's views and actions around big data are fuelled more by fear, uncertainty and doubt, than rational analysis.

One noted, and echoed by others, that consumers will continue feeling uneasy about this, but business will continue to do it anyway.

It was perhaps best summed up by a senior officer of the Office of the Privacy Commissioner, who noted that consumers can be reasonable about the use of their information if it's put to them in a reasonable way, but, if they don't know about it, they often claim that they would never have consented in the first place — even if that would be against their interest.

One noted that when the U.S. data company Axiom made known to consumers they had personal information on them, consumers were offended. When the data was made available to consumers to verify and correct, many did so.

| Global Economy

Three key informants brought the overlay of the Internet's global economy as a significantly complicating factor. One likened it to the change ushered in by the Industrial Revolution, another that the use of technology by U.S. or international corporations may

seem wonderful, but ultimately may not be what Canadian consumers want.

One noted the differences between European and American privacy standards, laws and regulations driving greater privacy protections in the U.S. and Canada, because international companies complying with European rules may find it simpler to offer common standards of consumer protection.

| Methods and Rationale

Key informants agreed that dynamic pricing occurs in various ways and degrees, with varying benefits and harms to consumers, but often of significant benefit to business.

A new dynamic in e-commerce is merchants' attempts through the use of dynamic pricing to make the price of goods less dependent on their cost. Associated online service charges and differences in user experiences are being employed as the basis for price differentiation for identical products. For the consumer, this sometimes adds value, but may create uncertainty in consumers' understanding of the value proposition.

Price offers that may seem "dynamic" to the consumer may result from complexity, instead, it was noted. For example, in the case of an airline ticket, the reference prices used by the consumer when attempting to exercise choice may be based on different service features.

Some noted that the dynamic pricing has been more common for longer for services, and the personalized nature of services makes the application of pricing factors quite complex.

One said what is price discrimination to a consumer is price optimization to the business. (Wunderlich)

Another noted that the reason organizations use personalized pricing is based on a combination of cost and "business choice". Technology can be the barrier to entry to the use of big data for personalized pricing.

Business takes advantage of this complicated transactional environment, and it is difficult for consumers to "disaggregate, analyze and respond" to the changes in their pricing, to the extent they are even aware it is happening.

| Benefit

Most agreed that some benefit could accrue to the consumer, but none suggested that the purpose of such pricing methods was foremost to benefit the consumer. One noted that if pricing based on profile knowledge was transparent and user friendly, it could cause an organization like Amazon to "actually score points for transparency".

It was noted that there is a significant knock-on benefit in some dynamic pricing situations where those willing to pay will use more efficient products or services, leaving the unpaid services a little less crowded. In particular, toll roads and congestion charges were cited. One consumer reporter noted that loyalty programs can provide significant benefits to people, particularly with discount coupons based on a business' knowledge of

that individual.

Big data can be used for two purposes: optimizing merchants' profit margins and improving the competitiveness of product and service offers. Furthermore, the benefit of knowledge of a consumer creates the potential for more appropriate offers and product and service planning.

| Trust

Key informants agreed on the importance of businesses building a trusted relationship with consumers. Many noted that government can play a key part in trust, both generally and more specifically giving an air of legitimacy to organizations facilitating the 'sharing economy'. The sharing economy is demonstrating how trust can be established mutually, which can serve as a strong basis for consumer acceptance of pricing.

There is an element of fairness and morality that consumers see and feel and judge on. (Jenkin)

Consistent safety and quality standards can engender trust. It can be a business opportunity to develop them. It can be good business to take the steps necessary to improve consumer confidence built on trust. (Wunderlich)

One noted that it can be fruitful to look at what "good actors" do – how they self-regulate and validate – to create consumer trust. Looking to the use of a trust mark of a sort, not unlike the P3P¹²⁵ platform for privacy on the Web, would be beneficial and could be strengthened by the support of consumer groups.

As one sharing economy company owner noted: "At the end of the day, it really does cycle back to trust."

| Harms

The key informants generally agreed that business "holds all the cards," implying this could lead easily to consumer harm. Some described dynamic pricing as involving "not necessarily satisfactory practices," (Jenkin) particularly given a business' "better position to control the relationship." One noted the ongoing issue of loyalty programs, and consumers desire for them, but the increased capability for business to benefit to the detriment of the consumer.

Many indicated a risk to vulnerable consumers, which can rise both when purchasing through the Internet or because it is unavailable to them. (Roseman, Jenkin).

There was no significant concern about significant damage from the use of an individual's personal, demographic or behavioural information past the potential inconvenience.

The biggest concern around harm to consumers was that prices could rise and be a disincentive to planning and saving for a purchase.

Without some kind of compulsion, business is likely to invest in thwarting effective price comparisons, automated or otherwise, by the consumer.

| Barriers

The biggest barrier to businesses looking to convey meaningful information is the limiting model of privacy policy notices, exacerbated by the diversity of consumer concerns and needs. As one noted: “a privacy policy statement serves many, many purposes all at once, but like the jack of all trades, it’s the master of none”. Even when businesses want to be clear, it can be difficult. It’s necessary to get consent from a consumer, and to enable them to ‘opt out’. Consumers’ expectations must be managed. Consumers need to know the implications of giving this information. Sometimes they need to know that failure to provide certain information, means they won’t be able to complete the purchase. (Elder) Many noted the complicating factor of mobile and its small screen.

There are issues of practicality, structure and cognitive issues for consumers. (Austin). It’s difficult enough getting everything conveyed from a regulatory point of view, without changing the current paradigm of notice and consent. Conveying the intricacies of something like surge pricing, is very difficult. Different consumers want to see it differently. Some may want to see the calculation, others the multiplication factor, and others the final price. “No one’s doing that mental math in their head because they don’t know what that final number is. Then maybe showing that final number is actually a better way to do it.” (Wootton)

In essence, combining the specific identified needs of consumers for dynamic pricing, with the conduct of business can be a challenge. In the sharing economy, a technology owner, may be trying to balance a need “to optimize all three sides of the equation, that being your cut, that being the owner’s (the consumer as provider) cut and that being the price consumers are willing to pay. Bouncing back to a point where it can be optimized is pretty tough.”

As Elder noted: “There’s fairly fundamental things businesses try to resolve: (1) they want to know who they are, so they can understand more about them, so they can try and (2) develop product and services that better meet those needs and, of course, ultimately to (3) sell more, and to make more money. They also want to use personal information to serve customers – to serve individual customers – and to know and anticipate what customers want.”

Many sellers may consider their algorithm to be proprietary, relative to both buyers and other sellers. They don’t want to publicize them. Currently in Germany, the courts have held that this is the case, and access to pricing algorithms to those outside the selling organization have been denied. (Busch).

Another noted that the initial algorithm may be known based on programmers and business models and formulas, but, as it is modified through artificial intelligence type programming, the details of a specific transaction may be difficult to determine.

| Regulators

Many key informants suggesting any form of regulatory action, typically followed up with a qualification that complexities, and the rapid degree of change, in market segments and industry would provide significant challenges.

One suggested the need for a regulatory environment that creates a basis for consumer protection to keep out “pirates”.

There isn’t a strong regulatory environment that can easily enable consumers’ trust relating to pricing, determined by individual characteristics, so consumers can get what they expect.

| Recommendations

Disclosure was the preferred recommendation, but it was accompanied typically by a qualifier, in that while it may be an answer, it is a particularly difficult one given the complexity of what is being delivered. Also, it is problematic whether disclosure would be faithfully made. It was noted: “Uncertainty favours the business”, so that will dampen their enthusiasm to improve disclosure without being required to do so. Yet the conclusion was to increase clarity and choice through better and more timely disclosure, in an effort to reduce what one key informant called FUD – fear, uncertainty and doubt – in making purchases.

One key informant (Austin) noted that the paradigm for privacy policy notices should be turned from one of just protection and security to one that starts engagement around the mutual benefit of the use of such information.

Several key informants, citing both the capabilities of technology, and the varying interests and needs of consumers for pricing information, suggested technology solutions allowing consumers to get the components of pricing based on their interests. “There is no lack of technology, just a lack of business will.” (Wunderlich). Multiple key informants indicated the need for appropriate user interface design, which one clarified as getting out of the lab and “getting into the mindset of the consumer”. (Homan)

One noted the use of a trust mark and how consumers could rely on it as a sign of reputation.

Consumers should consider using a private browser when purchasing online, said one key informant particularly familiar with law and practice in the U.S. privacy environment.

V

Framework Discussion Research Questions

Consumer Protection Framework

The following table indicates the current relevance (where applicable) of dynamic pricing for each of the eight consumer rights and responsibilities, and privacy in the context of recommendations for consumers, business, regulators and standards developers.

	Relevance
<p>Safety The right to be protected against goods or services that are hazardous to health and life.</p> <p>The responsibility to read instructions and take precautions. To take action to choose safety equipment, use products as instructed and teach safety to children</p>	Nothing identified as specifically/particularly relevant in the scope of the study.
<p>Information The right to be given the facts needed to make an informed choice, to be protected against misleading advertising or labelling.</p> <p>The responsibility to search out and use available information. To take action to read and follow labels and research before purchase.</p>	Consumers should know whether and how dynamic pricing is used. Its effect can be increased when combined with other merchandizing techniques. Consumers may be uncertain what information to discount in relation to price, and, in any event, by the time they can do so, a price offer may have vanished. It can be difficult for consumers to take action because they don't have adequate information. Consumers effectively pass the right to choose to business, which may not place their best interest first.
<p>Choice The right to choose products and services at competitive prices with an assurance of satisfactory quality.</p> <p>The responsibility to make informed and responsible choices. To take action to resist high-pressure sales and to comparison-shop.</p>	<p>To exercise choice, consumers need to know prices relative to competitors.</p> <p>Consumers may find it increasingly difficult, and time consuming to exercise choice in the absence of reference prices – sufficiently durable, comparable, price offers. Consumers can make better choices when they have access to reliable reference prices, and there is fair and transparent pricing based on real supply and demand..</p> <p>MSRP can be – and many believe to be – a notoriously unreliable reference price.</p> <p>Loyalty programs, while popular with many consumers, may make it more difficult for consumers to compare prices.</p>

<p>Representation The right to express consumer interests in the making of decisions.</p> <p>The responsibility to make opinions known. To take action to join an association such as the Consumers Council to make your voice heard and to encourage others to participate.</p>	<p>Consumers may easily know when they should make representation, given the opaqueness and complexities of dynamic pricing.</p> <p>Most remedies are complaint triggered enforcement, not typically investigative.</p> <p>Consumers can participate in determination of ways to incorporate personalized pricing into retailers models. Businesses may be reluctant to have consumers understand the algorithm behind a price offer.</p> <p>Representation may only be possible through actors on behalf of consumers with the institutional capacity to do so.</p>
<p>Redress The right to be compensated for misrepresentation, shoddy goods or unsatisfactory services.</p> <p>The responsibility to fight for the quality that should be provided. Take action by complaining effectively and refusing to accept shoddy workmanship.</p>	<p>A consumer may lose value in an exchange because they are inextricably attached to a first transaction caused to be undesirable by a seller.</p> <p>Dynamic pricing issues may lead to more “returns” or efforts to obtain redress as consumers subsequently find they may have paid ‘way too much’, or feel deeply ‘buyer’s remorse’.</p> <p>However, the potential to capture a transaction data trail exists, which could facilitate methods of investigation and redress in the event of inappropriate pricing.</p>
<p>Consumer Education The right to acquire the knowledge and skills</p>	<p>This is a new complex concept for many. It is important to go beyond disclosure, to educating to develop consumer understanding. It will be considerably more complex to educate about how to compete concerning a price offer made through the deployment of well-crafted algorithms.</p> <p>Given customers’ attraction to non-cash incentive offers (e.g. loyalty programs) that may be detrimental, a need for financial education is indicated..</p> <p>Consumers may not know that they need education.</p>
<p>Healthy Environment The right to live and work in an environment that is neither threatening or dangerous and which permits a life of dignity and well-being.</p> <p>The responsibility to minimize environmental damage through careful choice and use of consumer goods and services. Take action to reduce waste, to reuse products where possible and to recycle when possible.</p>	<p>Nothing identified as specifically/particularly relevant in the scope of the study.</p>

<p>Privacy The right to privacy particularly as it applies to personal information.</p> <p>The responsibility to know how information will be used and to divulge personal information when appropriate.</p>	<p>Consumers expect to know who is using personal information to give price changes, particularly for affiliates, downstream and extra-jurisdictional organizations. They want the opportunity for meaningful consent.</p> <p>Hypothetically, consumers might exercise their responsibility to request removal of their personal information. While privacy policy statements appear to nominally follow the regulations set down in PIPEDA, they are not as effective as purported by business, and exacerbated when transferred to third parties.</p> <p>Concerns abound that privacy is lost, as connections to non-personal information can be used to understand consumers as if retailers had significant personal information dossiers.</p>
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Discussion

The comments in this framework discussion do not necessarily extend to the behaviour of all consumers, or business. The comments regarding consumers are based on the comments from our literature review, the PIN survey, focus groups, online survey and the interviews with our key informants, and reflect their views, from which we have drawn insights and conclusions, in coming to our findings and recommendations.

| How We Arrived at Dynamic Pricing Models Grouping

Based on the expressed opinions of the PIN, and the results of the focus group discussions we determined that the traditional categorization of dynamic pricing such as Yield/Revenue Management were neither familiar to consumers, nor easily understood. Consequently we determined categories based on a consumer’s perspective: one that grouped familiar traditional pricing discounts; a second that grouped practices not uncommon or unknown to consumers, but more readily enabled by technology; and a third, for practices least known to consumers and that leverage big data, potentially in combination with targeted, more personal information, including a consumer’s conduct or behaviour.

| Methods and Rationale

Traditional

Consumers are largely aware and accepting of the traditional dynamic pricing methods, seeing them as discounting, not as differential pricing.

While loyalty programs may have discounts based on behaviour, as in prior purchases or preferences, given their longevity and broad current use we have included them in traditional dynamic pricing. Furthermore, loyalty programs may offer non-cash rewards instead of or in addition to discounts.

Technology Enabled/Influenced Supply & Demand

Technology is enabling businesses to more efficiently align price with supply and demand. The opportunity to arbitrage market inefficiencies is motivating businesses to create and assert the legitimacy of secondary markets online. Examples of the development of such secondary markets are Stub Hub and LiveNation, resellers of event tickets.

Information technology in combination with the Internet has enabled municipalities and regional governments to charge more or less for commodities and services based on peak time demand, to achieve both revenue objectives and supply management associated with public interest objectives, examples being road tolls, parking fees, and electricity rates.

Large retailers are using information technology to more accurately measure and forecast demand, to manage inventories, and exploit product scarcity, whether through action to enhance supply or set prices.

Behavioural, Demographic and Personal Information

For behavioural dynamic pricing, it's the targeting, means of distribution and enhanced surveillance related to outcomes that need to be considered as issues within such pricing. The time efficiency of tracking these outcomes is a significant factor in such pricing. The competitiveness of individuals in price negotiation may be tipped, in that consumers are in a further weakened position because they don't have access to information (and perhaps the understanding of information) that resellers do.

An algorithm or artificial intelligence does not need to know your name, SIN, location, phone number, IP address, etc., to profile your behaviour and exploit you. The AI can "know you" and anticipate you in a personal way without reference to what has been classically understood to be personal information. Personal information does serve a purpose in certain cases involving big data because systems based on using historical data have used this kind of information to match datasets. But concerns are that this kind of dataset matching is used mostly to develop the algorithms. AI then can deploy in competition with the consumer, perhaps now needing only to make reference to a consumer's behaviour.

Technology is enabling behaviour-based pricing, taking into account prior purchases, purchasing patterns, demographics and current location – examples of this being found in expanding loyalty programs. The business models of some services are constructed around degrees of vulnerability, given previous research the Consumers Council of Canada has done around creditors insurance and payday loans among others.¹²⁶ Such people targeted will have a profile that can be used without their awareness of the detail of the personally identifiable information held by a seller. They may misapprehend "distance" in a transaction to provide anonymity.

Little evidence exists of the use of strictly personal information for personalized pricing, and this research's scope did not include specifically investigating this. Our research did not identify evidence of entirely personalized price offers. This research did not extend to

assessing the scope or financial impact on consumers resulting from technology developments that integrate the use of information, personal, demographic and behavioural, through algorithms and artificial intelligence. However, there is substantial evidence of interest among sellers, technology developers and investors, all of whom anticipate to varying degrees and say the increased computerization of price offers and integration with the provision of targeted information to be a highly profitable business practice. Claims, and research, of achieving higher business margins exist, and there is anecdotal evidence some rely upon to suggest online sellers are gaining advantage over traditional competitors. Share market capitalizations of some major, technologically capable online sellers suggest investor confidence in the prospects of these companies.

Although it must be noted that such uses are “loosely” allowed for in most major Canadian retailers’ personal privacy notices, most consumers in our focus groups were surprised that they have likely permitted retailers to use personal information to provide them individualized prices and clearly thought the practices were unfair. This perception was shared by participants in the online survey conducted for this research.

There is pressure on business to use such personal information pricing reported in news media accounts, which based on the views of academics and pricing consultants characterize it as savvy business management. While the enhanced use of dynamic pricing models may not be prevalent as yet or may be obscured from public awareness and not easily discernible by consumers, those responsible for making public policy concerning consumer protection and enforcement have more than enough reason to take note and maintain well-resourced watching briefs concerning developments. The high level of interest in the subject by technology developers and business also indicates the need for this.

Rationale

The rise of showrooming from price transparency has given consumers an advantage in information availability and in some cases put retailers at a disadvantage in extracting consumer surplus. The use of more sophisticated and covert dynamic pricing may negate price transparency, reduce comparison shopping and introduce price inefficiency.

Economically it is considered that there is a progression of increasing benefit to a retailer/ seller to use dynamic pricing. A literature review found research-based claims that targeted demographic information can increase profits 1-2% (depending on context), but the use of targeted behavioural and personally-identifiable-information-enabled dynamic pricing can increase profits considerably more than reliance on demographic information. There is competitive pressure being created by the availability of economic research, analytics organizations and pricing consultants to develop sophisticated dynamic pricing practices and to attempt to be first to market in doing so.

There is a concern that the primary marketplace of competitors will be for consumer

data, not to serve consumers but themselves. Those with the data will be in the best competitive position. The focus on competing for consumers may become secondary to the competition for data. The organization with the most and best data wins. Furthermore, it's about much more than having data. It's about the level of sophistication of data processing, and how competing sellers develop it or gain access to it. Where this data is offered exclusively, or sophisticatedly processed, it can be damaging to the competitive forces in the marketplace.

How an economist sees the potential to increase utility and surplus may be quite different from how an individual may experience it. One view is based on the agnostic nature of economic study and the other is based on the personal impact perspective on a consumer - in essence, the difference between classical and behavioural economic theories. The claims of pricing system developers and some researchers are that dynamic pricing models will enable sellers to widen the gap between costs and prices, which is contrary to the assumptions of markets theory. And, furthermore, as the sophistication of the data increases (particularly as the number of tracked or inferred variables increase), so do organizations' profits.

Also, where benefits do not accrue to a reseller, because of failed pricing models, to the extent that this has "across the board" impact, the result may be increased costs passed to consumers.

| Harms

Confidence in the Marketplace

The price sticker as Gabriel Tarde explained, "was the introduction of a truce into the war that was haggling."¹²⁷ It wasn't perfect, but it produced a simple, level playing field. A more complex and less transparent marketplace is not good for consumers, particularly the vulnerable. And, in complex areas that include data privacy, competitive (or anti-competitive) forces, online transactions happen quickly. Combining this with targeted marketing and pricing methods and the uncertainty and vulnerability only exacerbates.

However, it appears sellers are becoming enthusiastic for pricing methodology that breaks the "truce" and may offer the consumer not even the minimal benefits of haggling.

Consumers could be back to playing defence. They don't know how information about them is being used to create price offers. They don't know if and when it is being used and to what benefit or detriment to them, despite being presented with the façade of a "better offer." They are just beginning to understand some of the complexities of privacy. Not all consumers value privacy in the same way, let alone in the application of their values to different products or services. Their willingness to divulge such information varies, as does their understanding of the reality of the use of their personal information.

As pricing methods become increasingly opaque, the ability for consumers to collect valid

reference prices diminishes. Individualized offers, sometimes very time limited, complicate consumers' ability to make price comparisons and exercise choice.

Our research suggested that the competition in the marketplace may move more to one of competing for consumer information, than to serve consumers. The focus of knowledge will be to entice consumers and persuade them to pay high prices, to satisfy the goal of higher profits.

This raises the concern that the outcome will be fewer sellers and less competition over time to satisfy consumers.

Consumer Privacy Concerns

Typically the privacy regulations of PIPEDA are not breached by dynamic pricing. As long as the organization indicates that the information will be used for a certain purpose, and notes what information is taken and ensures that the minimal level of consent is achieved for doing so, they are allowed to construct a wide range of dynamically determined, personal price offers, even though the consequences are often unknown to or unappreciated by the consumer.

Many consumers have expressed a clear concern for protecting private information, and, in our surveys of the public and the Council's Public Interest Network, consistently strong negative reactions were recorded concerning the use of demographic, behavioural and personal information to construct personal price offers. Consumers are especially suspicious of the practice when they don't know the basis for constructing an offer. The research indicates consumer concerns are exacerbated by the fact such techniques are difficult for most consumers to comprehend. So they suspect they are placed at a disadvantage.

Canadian retailers state in their posted personal privacy notifications that personal information may be used for purposes that arguably would include virtually any type of dynamic pricing, including that making use of personal information and behavioural information. None divulge possible implications of personal information being used to construct price offers. They don't share potential risks, such as comparison-shopping being made difficult or impossible or that the consumer will not know the variables that might lead them to be offered a higher price than others. They don't assure consumers that personal information will only be used to offer price discounts.

Disclosure around possible intentions for the use of personal information to set prices is weak. Consumers are unaware of what they have agreed to, despite generally accurate statements having been made to them. So, disclosure will not on its own necessarily solve the problem, and could worsen it. More careful and effective solutions might seek to level market power, by ensuring both buyers and sellers are fairly armed within a technological arms race. Or market regulation could be used to correct for information asymmetries or smooth price volatility or promote durable price offers.

Many consumers and some of the key informants indicated that better disclosure about pricing methods would contribute to a better functioning marketplace. But it's likely, the required disclosure, a voluntary, clear statement of the method and implications of pricing, would be resisted by retailers. Consumers have clearly indicated that if they know such pricing is taking place they will react negatively. Retailers may know this already, and be motivated to obscure their practices.

Furthermore, as several key informants noted, the personal privacy notice is tasked with many requirements, and providing this in a palatable form for multiple device formats and for consumers coming from different perspectives and contexts, some indicating vulnerability, is a daunting task, and realistically not often done adequately. Simple changes, such as changing the term "Personal Privacy Notice" to "How We Use Your Information", as suggested by the U.S. Federal Trade Commission might better draw consumers attention to this key information. Furthermore, requiring express consent in context for use of such information would be an improvement over the low bar set that a notice need only be present to indicate consent. Advising consumers clearly about how they can remove an organization's entitlement to use their personally identifiable information could further their protection.

Currently, as many of the key informants and some consumers said, "the business holds all the cards" in price setting.

Some key informants, realizing privacy regulations may not address the risks to consumers of dynamic pricing methods, suggested reform may be necessary to protect the consumer. In looking to privacy, key informants advised not only to improve disclosure and consent mechanisms, but also to require that benefits and risks of providing information be disclosed, control of the information be explained, and its uses and marketability be defined.

A problem likely to remain challenging is the lack of transparency of price-setting algorithms or the rationalization of applied artificial intelligence. In many cases sellers are likely to claim they are proprietary.

Reduction of Consumer Surplus

To the extent that research shows retailers' profits can rise significantly with dynamic pricing based on individualized variables, most if not all of that gain comes from an overall increase in prices paid by consumers. There will be some utility increases as consumers in some cases decide to purchase products they might not otherwise choose. Further research should be done in this area to determine the extent of such losses to consumers and how it varies by type of consumer and nature of the purchase.

Loss of Reference Price and Comparison

For many products, reference pricing availability has waned, to the disadvantage of the consumer. Key informants noted the loss of MSRP and more meaningful reference prices as

diminishing consumers' ability to assess whether they have been offered a good price. The MSRP has been used as a reference price even though many products and services are seldom sold at or near their MSRP. Consumers do understand that some products are rarely sold below this price level, and some items, such as mattresses, are rarely sold for more than half of MSRP. Consumers want relatively reliable reference prices to consult and price offers that are durable over a period sufficient to facilitate convenient decision making. They would prefer to be able to leave an online site and return with the knowledge that the price they were previously offered is still on offer.

Consumers are presented in some instances with distracting information that may suggest scarce inventory. They do not really know total available inventory, immediately available inventory, manufacturer's inventory, or potential for 'just in time production' to provide inventory. Consumers don't know whether retailers are creating price offer presentations to encourage a rush to judgment about a purchase. In Canada, if a retailer makes a special price offer, they are expected to have adequate inventory. Are dynamic price offers online conforming to that expectation?

Stereotype Threat

As retailers add more variables to their calculations of what pricing should be for individuals, the research shows they are more accurate in their assessments of consumers. But the state of the art of many such assessments is based on generalization. Those who do not fit the pattern are subject to stereotype threat. A pricing system could exacerbate a state of inequality among vulnerable persons because of stereotyping. This would be difficult for an individual to detect, but implemented through thousands or millions of transactions the overall harm could be significant. Stereotype threat as related to price modelling deserves study.

| Consumer Awareness

Overall Awareness

Consumers are aware of traditional dynamic pricing, and their perceptions of it vary. They understand the differences between traditional dynamic and the emerging more covert methods, evidenced by the online survey results indicating the trend from traditional to pure first degree price discrimination. Interestingly, where there has been negative publicity (e.g. Uber) there was a high spike at the most extreme level of perception of the method as unfair.

Consumers are wary of pricing on patterns of personal behaviour – contrary to their oft-stated interest in special offers attuned to their needs. They appear to accept targeted advertising better than they do targeted pricing.

There are indications that involvement in the price setting can influence their disposition. It would, however, be difficult to personally engage consumers concerning every price offer.

Businesses prefer not to share their approach to price setting with their customers.

Consumers don't know how prices are set, and whether the price offer they receive is unique. It can be difficult to discern whether a price variance is arbitrary or connected to feature/service level differences. For instance, a hotel site may offer the same room on different websites at different prices. If the first site offers a better transaction process or bundles the room with amenities it may be considered to offer a different service or product, not a personal price.

Traditional Dynamic Pricing

Of the three dynamic pricing model types considered in detail by this research, the 'traditional' types were the ones most positively received by survey respondents.

Yet, less than 60% of consumers considered both seniors' discounts and volume discounts, two traditional pricing methods, to be fair. Significant numbers of those surveyed felt neutral about or found the pricing tactics unfair.

Even though loyalty programs are highly subscribed and accepted by consumers, only 45% of respondents found them to be fair to the consumer.

So consumers do not overwhelmingly consider traditional dynamic pricing discounts and programs to be fair practice.

Arguably, age discounts are discriminatory but evoke little consumer concern about age discrimination. They appear to be like student discounts, a social norm.

Technology-enabled Supply and Demand Dynamic Pricing

The trend of survey responses leans moderately to the negative in the case of technology-enabled supply and demand dynamic pricing models. However, in general, consumers' negative views are not as strong as their views of traditional methods are positive.

All four examples tested were rated as fair by about 20 percent of those surveyed, and about 30 percent found them unfair. The remainder of respondents felt effectively neutral about these methods.

Individually all four methods are legal and do not breach, on the face of it, the particular regulatory environments that control them.

Looking at them individually:

Uber Surge Pricing gathered the largest negative reaction to fairness among the four types of pricing grouped in this model. This indicates to us a significant negative emotional reaction by some, which may arise from the significant news media exposure, pro and con, Uber has received.

On the face of it, Uber surge pricing seems to be straightforward supply and demand pricing. Concern seems to arise resulting from both consumers' understanding of the reasons for a surging price and from not knowing the reason prices have risen past expectations. Uber displays only the final price, without reporting price influences, and not the multiplier relative to a reference price. For those using a "taxi", a reference price for the

normal price for a certain drive is not commonly known, even though it is posted in the cab. Posting doesn't always ensure that consumers understand how prices are calculated, partially because the information can be complicated and different consumers want to come to the total in different ways. Arguably, it is not Uber's business model that is making it work for them, but communication to prospective buyers of what they need to know.

StubHub operates a secondary market for event tickets, influenced by supply and demand and funded by transaction fees. Survey responses were negative for this model, as well, but slightly less negative than for Uber. This may result from the deeply held consumer perspectives about ticket scalping and other secondary market practices experienced by consumers historically.

Major League Sports charge different ticket prices for different games scheduled well into the future. This practice of valuing some contests as ones of greater public interest, perhaps based on past experience of the seller, appears to attract less negative reaction than the prior two types. Ostensibly, consumers are familiar with practices like this in sports and particularly in entertainment and, perhaps based on experience, recognize the value proposition involved.

Amazon pricing based on supply and demand attracted negative perceptions, too, but the distribution of fair to unfair was more level. There is room to consider whether consumers believe online expressions of supply are relevant to actual supply or reflect demand. Overall the way Amazon approaches supply and pricing is considered somewhat unfair. As with other technology enabled supply and demand dynamic pricing practices there was a larger percent in the strong negative category but a relatively even distribution otherwise. Overall, this is not seen as fair, but we believe more people either are accepting that such prices change as competitive factors change, or they are unaware. The difference now is that such activity can be applied to a greater number of lower-priced items, many times a day if necessary. This large increase in the frequency of changes is a significant new development, with an attendant risk of unintended consequences.

Demographics, Behavioural and Personally-Identifiable-Information-Enabled Dynamic Pricing

Consumers have significant concerns regarding the fairness of pricing based on their demographics, behaviour or personal information — demonstrating stronger negative reaction than for any of the supply and demand or traditional methods. When they find out the practice, they are suspicious of the benefit to them, even when they might be favoured.

The offer of different prices on different source websites for the same product or service is not necessarily in breach of the regulatory requirements or guidelines listed in relevant legislation and regulation. Some organizations may operate multiple selling sites, some may offer preferred services and/or improved buying experience when purchasing the same item. Not all do, and certainly many consumers express a negative view about the fairness

of the model.

In using a cookie to record consumer behaviour, a retailer is not necessarily breaching privacy regulations. They may not use information that personally identifies the user or records their behaviour to determine price. They may be tracking the behaviour of the consumer before they elect to purchase. Given the public's strong negative reaction to this, and the position of many that tracking behaviour in detail may be intrusive, regulators and business should review the nature of this sales conduct carefully and consider whether there are options to enable consumers to make themselves free of it.

| Business Barriers

Disclosure

Businesses looking to improve their disclosure are hampered by multiple issues. Different consumers want different information. Individual consumer's needs will vary depending on what they are purchasing. There are base level regulatory disclosures necessary. Making such information available effectively to a varied consumer base is difficult, particularly on mobile.

Competition for Consumer Big Data

Acquisition of consumer data may allow stronger competitive positioning than acquisition of customers, where organizations can access data that others (particularly smaller ones) cannot. Organizations, particularly smaller ones, may not have the preparedness for, or access to, such customer information disadvantaging them competitively. Some organizations may have a monopolistic or oligopolistic position in data. Those with a larger customer base may have such information and can exploit identifiable trends without evoking privacy concerns based on personal information. This information may be complex and the algorithms necessary to truly take advantage and target well, may be beyond the reach of the small business.

Many smaller organizations have strong personal customer insight, but in transaction environments where the consumer doesn't highly value having an interpersonal relationship, this will lose its value. Where that personal insight remains important, smaller businesses can learn how to better observe and respond to the needs of their customers, and, in particular, determine the data points that will assist in gaining and exploiting this insight.

Complexities of Using Big Data

Assuming an organization can acquire adequate consumer "big data" they must be in a position to understand and use it to meet their objectives. They must be able to create the necessary algorithms to coordinate a price offer to achieve their revenue goals, attract consumer satisfaction and achieve efficiency. Poor design could result in economic loss or consumer dissatisfaction or both.

Maintaining Pricing and Marketing in Sync

It was noted by some researchers that it may be difficult for organizations to keep their marketing and individualized price offers in sync, without coming into conflict with consumer expectations. This, in and of itself, indicates perhaps a system that is not integral to meeting consumer objectives to create consumer satisfaction.

Given that prices can be personalized/individualized, any price related marketing material must be somehow consistent with what's on offer. Achieving this may be more difficult for smaller businesses than larger businesses, and could represent a barrier to entry for small businesses.

Fear of Stereotype Threat Backlash

Pricing models constructed based on some generalizations can further personal stereotypes creating a public relations problem for an organization. Some businesses, like insurance, model product prices on gender, and failing to do so could affect a company's success. If stereotypes reliant on coarse interpretations of "big data" form the basis of retail price offers, some consumers could be harmed. This was not a risk investigated, but it is worth highlighting as a fit target for research.

Algorithm Transparency and Retention

It is the combination of the accurate "Big Data", the increasingly powerful underlying technology, the consumer's rapidly expanding use of e-commerce, and the well constructed algorithm that will fuel the expected exponential use of personalized dynamic pricing. There are risks of abuse as consumers can be paying only nominal increases, but when done so in the thousands or millions it can be the equivalent of increased profits – a "death by a thousand cuts" for household budgets and a source of income redistribution particularly significant for those who spend larger shares of their income on spending as opposed to saving and investment. It is unlikely that these algorithms will be transparent. Therefore, both the price (relative to competitors) and pricing method will border on opaque. Business will seek to claim such algorithms as proprietary to shield them. There is a significant risk of a lack of transparency, both from a consumer wanting to know how anything is priced, to enforcement authorities looking for regulatory breaches.

Certain enforcement mechanisms will allow investigation of potential abuses, for price claim abuses, etc., but without transparency what's the basis for laying a complaint? It's not simply transparency of the algorithm, as there are potential layers of transparency and to whom and under what circumstances it should be granted.

The algorithm could be known if sellers were required to preserve their code. And its outcomes could be audited if sellers were required to take and retain a snapshot of the variables applied to each transaction. The issue of big data and technology and e-commerce and pricing, serving as a basis for individualized pricing, also enables a clear record of both transactions and intent and methods of calculating price. As well it can show these relative

to other consumers with the potential for identifying abuses. Organizations, aware of this and the risks of regulatory enforcement, would be wise to set reasonable reference prices easily obtained and/or presented to consumers. This information could come from the organization, other purchased big data, or even government data collection, which already includes prices on a range of commodities monitored to establish the consumer price index.¹²⁸

| Regulatory Efforts

In the long term, oversight of dynamic pricing by regulators needs consideration, because it is too easy to keep information consumers should consider away from them.

Given the expectation of an increased competition for data, perhaps in some cases leading to exclusive access and control, our concern is that there may be monopolistic or oligopolistic tendencies in the use of data, warranting review or investigation by the Competition Bureau.

Consider section 74.04 of the Competition Act regarding Bait and Switch. This is an application of a notion of price durability. Price advertising usually includes a statement of applicable period.

Consideration should also be given to Section 54 of the Competition Act regarding Double Ticketing. Offering different prices on an identical product or service clearly available and offered at prices higher and lower to other customers during the same time interval, might be considered in principle to be the same as double ticketing.

Advertising Guidelines

Price is often a key component of many advertising programs. As price offers become more complex, advertising guidelines should be modified to set out acceptable approaches for indicating and displaying individualized price offers.

Under Advertising Guidelines “Advertisements must not omit relevant information if the omission results in an advertisement that is deceptive or misleading.”

Failure to communicate the durability of a price offer could serve to mislead consumers.

PIPEDA & Privacy

People are generally unaware their personal information, whether gathered directly from them or collected from other sources, may be used to construct price offers, even though the privacy policies we examined for many major Canadian and international companies are sufficiently general in construction to cover the use of information in this way. The result is a significant gap between the reality of privacy protection and consumers’ expectations for how price offers may be affected.

Regulations dealing with the form of privacy notices typically appear to be followed, but are vague when communicating uses in specific terms consumers might recognize easily. This taken in combination with the way notices are accessed does not contribute to users’

comprehension of them. The U.S. Federal Trade Commission has suggested that these notices would be better labeled: "Ways we use your information".

The intent of PIPEDA is that consumers know they have given consent, yet the effectiveness of these provisions remains nominal at best in the context of price offers. Few consumers when queried had any idea what they did or did not consent to permit. To the extent they are aware they are providing consent to share private information, they often believe their only choice, if they wish to proceed with a transaction, is to agree, recognizing they are compelled to enter into an inequitable contractual relationship to use Internet services or engage in e-commerce.

Consumer Protection

Of the regulation/legislation relevant or applicable to dynamic pricing, the one most focused on the consumer is the provincial consumer protection legislation.

Among the examples of what most province's laws would consider false, misleading or deceptive representations:

- a specific price advantage exists, if it does not.
- exaggeration, innuendo or ambiguity.
- confusing the purpose or intent of any communication with or solicitation of a consumer

Merchants and regulators may wish to consider whether presentations (user interface or algorithmic model) for delivering price offers when the appetite of a potential buyer by implying a price advantage that does not exist, creates an ambiguity with regard to reference prices, or misrepresents the purpose or intent of an online retailer's website to offer a 'free market' when the reality is something else.

Standards

International standards are in place in many areas designed to protect consumers, including as noted in the Standards Council of Canada's promotional material:

- Food safety and quality.
- Clean and safe drinking water.
- Safe and effective household products when used as intended.
- Safe construction of both residential and commercial buildings.
- Safe and healthy workplaces.
- Road safety and the effective performance of vehicles and transportation infrastructure.
- Reduction in the frequency and severity of sports-related injuries.

Many of the benefits to business further noted by SCC include standards relating to technologies in e-commerce (and even those are limited), the items listed above for consumers benefits steer clear of technologies and e-commerce, focusing on the safety of products, not increasing the reliability of commerce processes. Other areas of standards

that have been attempted include privacy icons, trust sites and badges, and aggregators and judgements of Terms of Services for websites.

The recent drafting of ISO 20488 *Online Consumer Reviews* and the in-progress *International Work Agreement on the Sharing Economy*, led by CSA Group, are exceptions.

The era of complaints-based enforcement, rapidly changing technology and commerce environments, and the rapid globalization and amalgamation of significant market makers together drive the need for greater transparency for one of the more complicated areas of commerce, price-setting, particularly where the use of personal information, including behavioural information, and ‘big data’, in general, is involved.

A standard for dynamic pricing would include:

- Sourcing of data
- Transparency
- Validity of Data
- Privacy Issues
- Features of Local Law (e.g., privacy, discrimination, anti-competition)
- Advertising
- Pricing methodologies and processes
- Data Retention and Related Processes
- Dispute Mechanisms
- Marketing Synchronization

The primary purpose of the standard would be to allow businesses to price using dynamic models, protect proprietary algorithms, and yet involve consumers in the approach, to ensure effective communication and ensure legal and accountable practices that can be audited, or be subject to market surveillance, investigation or enforcement in worst-case scenarios. The objective would be to develop a standard conducive to use on a global basis, adaptable to the requirements of individual jurisdictions.

Stakeholder Analysis

|Stakeholder Outlines

Consumers

Consumers are in a weak position, because they are typically unaware of how and when personalized pricing is used.

Fair and transparent pricing based on real supply and demand (and related information) can be beneficial to consumers, particularly with larger online retailers where supply is not locally confined. However, consumers subject to personalized pricing will have little influence with retailers, because a price has been prescribed for them. They can inquire regarding pricing methods with retailers, initiate complaints where necessary, and request their information be divulged and/or removed from retailers under privacy regulations. But

their ability to participate in the market is limited. So, these consumers will be heard complaining about their privacy being offended without much opportunity to assess the harm, because they will be in the dark about the determinants of prices, potentially with fewer options to compare them.

Consumer Groups

Consumer groups can assist the interest of consumers in a fair competition within supply chains and between buyers and sellers and by seeking law and regulation that assures this. They can be trusted informants to consumers about the benefits and risks inherent, seeking to assess practices individual consumers might not have the time or expertise to consider thoroughly. Consumer groups can seek an improved marketplace, by offering consumers representation to achieve good business behaviour, effective regulation where necessary, and awareness and education among consumers vulnerable to practices they may not understand.

Retail (Online/Bricks & Mortar)

There is considerable pressure on retailers to use big data to improve price offerings, to maximize profits.

The larger retailers have significant influence and potentially a competitive advantage in use of information that they can gather. Furthermore, they can also afford better technology and consulting assistance.

Dynamic Pricing could be integrated with efforts to improve product/services. Merchants will not want to see regulation in this area, and almost certainly no change in privacy regulations affecting their actions. Many larger merchants will need to balance the issues between their bricks and mortar stores and online retail presences to ensure they are in sync from the consumer point of view.

Sharing Economy Providers

Sharing economy enterprises are high profile. Typically they assign a price to under-utilized assets, and price the use of these assets based on demand. The technology providers are in a position of dominance typically when it comes to the pricing methodology. Some may be satisfied to be rewarded by the proceeds from limited inventory of a product or service, rather than take an interest in increasing supply.

These enterprises are still developing consumer understanding and acceptance of their pricing methodologies. They may face difficulties in their relationship with providers and consumers understanding pricing, sharing their methodologies or having to offer their algorithms for inspection as concerns about their role in supply chain increase.

Sports & Entertainment Organizations

Sports and entertainment organizations are increasingly setting prices based on expected demand. These organizations want a share of the secondary market in tickets, as ticket

value may increase because of difficult to forecast circumstances. This has been expanded by enterprises such as LiveNation and StubHub, which have been capturing previously under-exploited potential revenue, from consumers prepared to bid up a ticket's face value. However, accusations of self-dealing have emerged, and for many event organizers a ticket is an entry point to a more extensive at-event monetization strategy which may become compromised when consumer surplus is tapped out before gaining entry or if event participation is diminished because of inefficiencies in the secondary market.

Travel (Airlines & Accommodations)

Travel organizations have used various forms of dynamic pricing for decades, and are cited for doing so by consumers, positively and negatively. These organizations can operate from positions of dominance, defined by time factors, consumer vulnerability and level of marketplace choice. Their offers can be complex, defined by an array of features, designed, perhaps, to distract as much as to serve customers, in addition to supply and demand considerations. Price aggregators may play a large role in sales of such products and services to consumers.

Utilities & Municipalities

Utilities and municipalities often manage public needs for services subject to steep peaks and valleys of demand and encourage the redistribution of demand to periods of under use for assets such as parking, roads and electricity. This can help moderate demand for new and expensive public investment. However, these enterprises often must serve users who cannot adapt to demand pricing and may have basic needs that go unmet. The impacts of dynamic pricing can present to the consumer as an exercise of arbitrary power, particularly in the case of sole providers.

Regulators

Many areas of law and regulation are affected by the direct and indirect consequences of dynamic pricing, particularly violation of privacy, unfair competition and unconscionable pricing practices. Enforcement is often complaint rather than surveillance based. Consumers can become victims of unanticipated harm. Advertising standards, in the absence of voluntary compliance, may be enforced with fewer tangible consequences, even, than laws or regulation. Some industries making use of dynamic pricing are heavily regulated, but others, particularly retail stores, are not.

Greater certainty for both business and consumers about the legitimate application of systematized pricing models will improve marketplace confidence and consumer protection. Law makers and regulators must address loss of privacy, unfair competition between seller and buyer, unconscionable pricing, misleading advertising and discrimination, all potentially exacerbated by access to and use of big data.

The stability of markets and systems of government often relies on consumer confidence,

which should be carefully nurtured by both government and business.

Academic Researchers

Pricing, particularly through computer-driven algorithms and artificial intelligence, is a growing area of research concerning economics, e-commerce and consumer protection. Views vary about the impact of such pricing on stakeholders.

Because pricing models depend on algorithms and access datasets, demographic and behavioural in character, a rich resource for investigation and analysis is being created.

Academic input concerning methods, data sources and ethical practice should be of value to consumers, consumer groups, businesses, standards developers, regulators and law makers.

Caution should be taken that business incentives or objectives for business alone do not define academic research agendas in this area. Impartial and diverse approaches to the research will be important and should be a consideration for arbiters of research ethics. Public confidence that research agendas are free from the influence of pecuniary interests will be important.

| Technology Enabled Supply & Demand

Technology Enabled Supply & Demand Dynamic Pricing – Consumers A presentation of the consumer perspectives of Technology Enabled Supply & Demand dynamic pricing. These are primarily traditional pricing methods which technology has enabled to be more “real time and efficient.”	
Benefits & Opportunities	Harms & Threats
<ul style="list-style-type: none"> • Rapid price changes create opportunities for flexible consumers. • Forecasted demand pricing may increase prices and reduce demand, increasingly the likelihood of getting product. • Those with fewer funds can access more economical opportunities. 	<ul style="list-style-type: none"> • Consumers may be unable to obtain a price offer sufficiently durable to facilitate price comparisons. • Impulse purchases increase because of a sense of urgency. • Undue leverage from suppliers during times of emergency.
Potential to Mitigate Harm	Constraints
<ul style="list-style-type: none"> • Consumers need to complain about lack of price comparison and uncertainty of pricing methodology. Gather evidence of price offers by taking screen shots, etc. • Consider trusted aggregation sites, particularly those that are crowdsourced, taking care to understand the methodology of collection, moderation and publication. Contribute where possible 	<ul style="list-style-type: none"> • Ability to gather price information sufficiently stable to make comparisons. • The ability to synthesize price information rationally. • Consumers’ lack of knowledge of how specific price offers are constructed. • Consumers do not show strong support for these pricing methods; at best it was neutral.

Technology Enabled Supply & Demand Dynamic Pricing – Retail (Online and Bricks & Mortar)	
<p>A presentation of the retailer perspective of Technology Enabled Supply & Demand dynamic pricing. These are primarily traditional pricing methods which technology has enabled to be more “real time and efficient.”</p>	
Benefits & Opportunities	Harms & Threats
<ul style="list-style-type: none"> • Efficient inventory management • Sell product/service for larger profit margin, or sell at a lower price when otherwise wouldn't sell. • Have pricing ostensibly more in tune with consumers' expectations, to the extent they are aware of conditions (e.g., New Year's Eve surge pricing, end of season ball tickets). 	<ul style="list-style-type: none"> • Damage to reputation. • Loss of future business. • Poor algorithms can reduce profits, must rely on good information. • Angry, distrustful customers.
Potential to Mitigate Harm	Constraints
<ul style="list-style-type: none"> • Greater clarity around rationale and components/ calculation. • Allow for consumers to “hold” a price offer, allowing them to return after comparing prices • Carefully limit charges during times of emergency – weather, blackout, etc. 	<ul style="list-style-type: none"> • Technology required to manage calculation and display. • Inability to get accurate information and assess need.

Technology Enabled Supply & Demand Dynamic Pricing – Sharing Economy Providers	
<p>A presentation of the Sharing Economy Provider perspective of Technology Enabled Supply & Demand dynamic pricing. These are primarily traditional pricing methods which technology has enabled to be more “real time and efficient.”</p>	
Benefits & Opportunities	Harms & Threats
<ul style="list-style-type: none"> • Open and honest surge and high-demand pricing policy communicated well to consumers. Trusted pricing can bring in more consumers and more consumer providers – in a trusted system. 	<ul style="list-style-type: none"> • Pernicious pricing issues when there is emergency demand, due to weather or other unusual event. There is a risk of legal or negative public reaction.
Potential to Mitigate Harm	Constraints
<ul style="list-style-type: none"> • New rules for emergency pricing on surge and high demand times. • Communication to consumers of components of surge or high demand pricing. • Communication to consumers of lower pricing during periods of high supply or low demand. • As more businesses do it, consumers may develop greater awareness and skills around evaluating such pricing schemes. 	<ul style="list-style-type: none"> • Availability of consumer providers (not necessarily a pricing issue, though). • Smaller business may not have control over data or what they can calculate, as marketplace expands rapidly with players in and out.

Technology Enabled Supply & Demand Dynamic Pricing – Sports & Entertainment	
<p>A presentation of the Sports & Entertainment organization perspective of Technology Enabled Supply & Demand dynamic pricing. These are primarily traditional pricing methods which technology has enabled to be more “real time and efficient.”</p>	
Benefits & Opportunities	Harms & Threats
<ul style="list-style-type: none"> • A clear opportunity to enter into the secondary ticket market – indirectly. Organizations can move to a stricter licensing model for subscribers. The seller of the licence might retain the resale options. Buyers get surrender and exchange rights at some price points, or none at all – simple forfeit. 	<ul style="list-style-type: none"> • Handled badly can cause problems with season ticket holders/subscribers. • Organizers are struggling to enforce the conditions of license associated with the ticket, perhaps even more so with season ticket holders.
Potential to Mitigate Harm	Constraints
<ul style="list-style-type: none"> • Consumers understand that certain teams/ performances can elicit greater prices. • Hold back on manipulating for maximum profit. (e.g., don’t keep back tickets for games that will draw significantly higher prices right before game or performance time.) Don’t create artificial demand. 	<ul style="list-style-type: none"> • Existing consumer protection laws regulating reseller rights.

Technology Enabled Supply & Demand Dynamic Pricing – Travel	
<p>A presentation of the travel organization perspective of Technology Enabled Supply & Demand dynamic pricing. These are primarily traditional pricing methods which technology has enabled to be more “real time and efficient.”</p>	
Benefits & Opportunities	Harms & Threats
<ul style="list-style-type: none"> • Travel sector has used such pricing for decades. It has necessarily managed the time-based inventory under its control. 	<ul style="list-style-type: none"> • Consumer distrust and negative reaction can ensue when they start to understand that pricing may vary on what site they use. • All pricing, but especially complex price offers, will be susceptible to consumer dissatisfaction within the context of failed service delivery.
Potential to Mitigate Harm	Constraints
<ul style="list-style-type: none"> • Communicate clearly the methods for pricing. • Efficient delivery of price rebates for failed service delivery. 	<ul style="list-style-type: none"> • Individual operators, using shared application services, and smaller companies are catching up with larger ones in the use of pricing technology.

Technology Enabled Supply & Demand Dynamic Pricing – Utilities and Municipalities	
<p>A presentation of the utilities and municipalities perspectives of Technology Enabled Supply & Demand dynamic pricing. These are primarily traditional pricing methods which technology has enabled to be more “real time and efficient.”</p>	
Benefits & Opportunities	Harms & Threats
<ul style="list-style-type: none"> • Reduce energy use by structuring usage to low use/ cost times, reducing demand for new expensive generation and distribution systems and reducing a variety of environmental consequences. • Introduce and encourage smart consumer behaviours to consumers with full disclosure and the trust of government. • Managing usage of municipal properties, particularly roads and parking. Assist to optimize use of public transit. 	<ul style="list-style-type: none"> • Public reaction, particularly when monopoly-based pricing model is sold into private hands or resulting from higher or volatile prices. • Redistribution of income adversely effecting consumers of modest means.
Potential to Mitigate Harm	Constraints
<ul style="list-style-type: none"> • ‘Smoothed’ use or deployment of limited municipal resources. • Reduced long-term costs to consumers. • Increase consumer awareness of benefits of limited energy usage. • Cause consumer to consider new, less impactful methods of generating and using energy or services. 	<ul style="list-style-type: none"> • Consumer education and resistance to behavioural change. • Public will and social policy objectives. • Public investment levels. • Managing projects with IT dependencies.

Technology Enabled Supply & Demand Dynamic Pricing – Regulators	
<p>A presentation of the regulator perspective of Technology Enabled Supply & Demand dynamic pricing. These are primarily traditional pricing methods which technology has enabled to be more “real time and efficient.”</p>	
Benefits & Opportunities	Harms & Threats
<ul style="list-style-type: none"> • Consumer and business education about legal pricing practices, identification and reporting of illegal ones. • Join with standards developers to produce an international standard for ethical, competitive systems of dynamic pricing, led from Canada. • IT driven pricing should mean algorithms and purchase data to exist for review. 	<ul style="list-style-type: none"> • Consumers may expect surveillance and enforcement outcomes from regulators who are lacking in capacity or ill-prepared to deliver either sufficiently.
Potential to Mitigate Harm	Constraints
<ul style="list-style-type: none"> • Look for instances of dominant position. • Run investigative tests on pricing to determine whether it truly is supply and demand, and not fixing based on dominance or e-collusion. • Whistle-blower laws with rewards. 	<ul style="list-style-type: none"> • The marketplace and technology may be changing too much for highly prescriptive regulation to be effective. • Complex algorithms for pricing may be beyond the current skillset of regulators to audit. • Complaints-taking may prove inadequate as a way to determine cause to investigate, since competing businesses and consumers may find it difficult to observe irregularities. • E-price-collusion may be difficult to observe.

Technology Enabled Supply & Demand Dynamic Pricing – Standards Organizations	
<p>A presentation of the standards organization perspective of Technology Enabled Supply & Demand dynamic pricing. These are primarily traditional pricing methods which technology has enabled to be more “real time and efficient.”</p>	
Benefits & Opportunities	Harms & Threats
<ul style="list-style-type: none"> Market models design exists for some industries (e.g. securities, energy utilities) but retail and most consumer services lack a suitable platform for this work, opening an opportunity for standards organizations that include consumer representation. 	<ul style="list-style-type: none"> Standards development process hijacked concerning a matter as sensitive to consumers and business competitors as price setting, leading to discredit of standards organization.
Potential to Mitigate Harm	Constraints
<ul style="list-style-type: none"> While not a focus of consumer concerns, it could gradually bring consistent price-setting conduct to business, and certification of same according to a defined standard. 	<ul style="list-style-type: none"> Any difficulty in starting in Canada with CSA Group, or lack of interest by Standards Council of Canada to pursue an international effort. Policy at any of CSA Group, SCC or key regulators such as Innovation, Science and Economic Development Canada and Competition Bureau could stymie such an initiative. Businesses might not volunteer to participate. Consumer representatives might not be supported by sufficient institutional capacity to deal with such a complex issue area, opening a standards development process to possible collusion around processes to set prices.

| Demographic and Personal Information Enabled

Demographic & Personal Information Enabled Dynamic Pricing – Consumers A presentation of the consumer perspectives of Demographic and Personal Information enabled dynamic pricing. These are primarily individual prices based on behaviour or personal information, or targeted prices aimed at demographics.	
Benefits & Opportunities	Harms & Threats
<ul style="list-style-type: none"> • Consumers have indicated a willingness in the interest of convenience to give up their privacy and give other relevant information (e.g., location) in order to be given discount personalized deals. • In an ideal world economically, consumers are believed to be better off when a true dynamic pricing model is made for each consumer, but this is not practical. A consumer that can trust the seller will consider this a benefit. • Consumers can receive offers more in tune with their purchase preferences. 	<ul style="list-style-type: none"> • Consumers have a tremendous false confidence. • The details of ‘deals’ may end up causing consumers to pay more than necessary. • A reliable reference price often is unavailable, and price comparisons are difficult. • Abuse of personal information by businesses/ organizations.
Potential to Mitigate Harm	Constraints
<ul style="list-style-type: none"> • Consider trusted aggregation sites, particularly those that are crowdsourced. Evaluate level of trust, and also contribute where possible • Consumers are in a strong position to mitigate harm to themselves. Options include: <ul style="list-style-type: none"> - Educate themselves. - Inform consumer groups of any potential problems or concerns - Complain to Competition Bureau or provincial consumer protection authorities - Question the ways in which such pricing is calculated. Demand to know what information is included. - Request such information under PIPEDA. - Demand that consent be clear, meaningful and informed. 	<ul style="list-style-type: none"> • A consumer’s ability to assess their privacy needs, juxtaposed against the benefit of dynamic pricing from a trusted source. • Consumers have only so much protection as the legislation and regulation allow, particularly around disclosure of use of personal information. • Many consumers have personal constraints/difficulties regarding the use of technology.

Demographic & Personal Information Enabled Dynamic Pricing – Consumer Groups	
<p>A presentation of the consumer group perspective of Demographic and Personal Information enabled dynamic pricing. These are primarily individual prices based on behaviour or personal information, or targeted prices aimed at demographics.</p>	
Benefits & Opportunities	Harms & Threats
<ul style="list-style-type: none"> • A large opportunity for consumer representation and consumer interest advocacy is in the area of demographic and personally identifiable information, as consumers have the most concerns about this pricing method. • A potentially high-profile issue that strikes hard at consumers’ sense of conscience. • Research and collaboration opportunities with a variety of stakeholders. • Advocate to regulators to avoid the damage that can happen, as business will not publicize it. 	<ul style="list-style-type: none"> • Can put substantial strain on consumer groups’ limited resources.
Potential to Mitigate Harm	Constraints
<ul style="list-style-type: none"> • Advocate for regulatory enforcement of competition and privacy. • Participate in standards development. • Assist consumers in understanding how price advertising guidelines may apply. • Assist in initiating complaints in a regulatory environment exercising little investigative power. 	<ul style="list-style-type: none"> • Difficult for consumers to participate • The damage to consumers can be done within the law, which will be difficult to change. • Consumers don’t always want change, as they may confuse harms with benefits. • Effective price surveillance will require even more resources than at present, and there is really no independent, Canadian consumer group providing reference price information nationally now.

Demographic & Personal Information Enabled Dynamic Pricing – Retail (Online and Bricks & Mortar)	
<p>A presentation of the retailer perspective of Demographic and Personal Information enabled dynamic pricing. These are primarily individual prices based on behaviour or personal information, or targeted prices aimed at demographics.</p>	
Benefits & Opportunities	Harms & Threats
<ul style="list-style-type: none"> • Businesses may find it too attractive an opportunity to ignore. • Research demonstrates 2-3% increase in profit when demographic information is used and considerably more when personal information is used to make price offers. • A clear competitive advantage/edge exists for those businesses ‘first in’. 	<ul style="list-style-type: none"> • Consumers are largely unaware of pricing that uses their demographic or personal information to determine prices that are not discounts to a standard reference or expected/normative price. Consumer reaction can be negative. • Relying on incorrect or weak algorithms can lead to negative counter-intuitive results.
Potential to Mitigate Harm	Constraints
<ul style="list-style-type: none"> • Business “holds all the cards”, and consequently the ability to harm or mitigate harm to buyers. Trusted, reasonable businesses will ‘self censor’ any egregious interest in maximizing pricing under such circumstances. • Offer minimum and maximum tracking price. • Provide reference pricing to consumers. • Contribute to any effort to develop a standard on dynamic pricing through ISO or the CSA Group/SCC. • Be transparent about pricing methods, through clear indication in privacy policy statements. • Make the method of pricing clear to the buyer when the transaction occurs. • Consider providing buyers with a ‘privacy receipt’ – an indication of privacy rights about to be ‘used’ during a transaction, to appear on the invoice. 	<ul style="list-style-type: none"> • The technology, data and knowledge to implement. • Using personal information requires more prescriptive privacy disclosures. • The cost of collection and maintenance, and ensuring adherence to what may be more regulated environments.

Demographic & Personal Information Enabled Dynamic Pricing – Sharing Economy Providers	
<p>A presentation of the sharing economy provider perspective of Demographic and Personal Information enabled dynamic pricing. These are primarily individual prices based on behaviour or personal information, or targeted prices aimed at demographics.</p>	
Benefits & Opportunities	Harms & Threats
<ul style="list-style-type: none"> Given the nature of the consumer to consumer business and significant technology app usage there is considerable personal information and location and usage data available. 	<ul style="list-style-type: none"> This will vary by organization and industry within the Sharing Economy. As they start to amass and use big data, the harm to consumers may accelerate, for instance in the taxi industry if data is used to leverage a market position.
Potential to Mitigate Harm	Constraints
<ul style="list-style-type: none"> Don't price based on demographic criteria affecting consumers' charter rights. Consider pricing based on individual to individual transactions, not B2B 	<ul style="list-style-type: none"> Existing law and regulation affecting access to some markets.

Demographic & Personal Information Enabled Dynamic Pricing – Travel	
<p>A presentation of the travel organization perspective of Demographic and Personal Information enabled dynamic pricing. These are primarily individual prices based on behaviour or personal information, or targeted prices aimed at demographics.</p>	
Benefits & Opportunities	Harms & Threats
<ul style="list-style-type: none"> • Consumers cite airlines as first example of dynamic pricing. Opportunity to explain pricing. • Travel industry has experience in the area and can be first to truly step further into the profitable use of personal information. • Accommodation can use differing referral sites to charge different rates without breaching any privacy or other regulation. 	<ul style="list-style-type: none"> • Travel has benefited from dynamic pricing and resignation and acceptance of consumers. This may open a public discussion to their detriment. • Aggregated market websites, such as Trivago, can enable consumers to get lower price and cause consumers to expect price inefficiencies to exploit.
Potential to Mitigate Harm	Constraints
<ul style="list-style-type: none"> • Lead in explaining the method of pricing. • Accommodation can take the opportunity to explain that lower paying customers may get less choice or lower value proposition at hotel. 	<ul style="list-style-type: none"> • May be very difficult to explain to consumers given the complexity, and even those consumers who want to do so may be unable to decipher such information.

Demographic & Personal Information Enabled Dynamic Pricing – Regulators	
<p>A presentation of the regulator perspective of Demographic and Personal Information enabled dynamic pricing. These are primarily individual prices based on behaviour or personal information, or targeted prices aimed at demographics.</p>	
Benefits & Opportunities	Harms & Threats
<ul style="list-style-type: none"> • A regulator’s mission is arguably a better marketplace. • Educate and increase awareness of regulator’s role. • Opportunity for detailed documentation of market conduct. Algorithms and data concerning the transactions are potentially available to audit and investigation. Automated market surveillance could be devised when merited. 	<ul style="list-style-type: none"> • Pressure from groups for regulators to act when it is not within their current authority, particularly privacy regulators. • Regulators become overwhelmed by public expectations for surveillance and enforcement in a sea of data without the technical expertise to parse it. • Complaints-based enforcement model hampered by lack of ways to observe pricing behaviour, preventing probable cause to investigate from being easy to demonstrate.
Potential to Mitigate Harm	Constraints
<ul style="list-style-type: none"> • Enforce privacy intent. Make clear that pricing will differ from customer to customer and the basis for legal differentiation. • Make eminently clear that consent from consumers must be obtained for use of personal information. 	<ul style="list-style-type: none"> • Enforcement of anti-competitive behaviour and privacy breaches are complaint driven and poorly funded. • Increasingly difficult to determine cases of anti-competition and pricing discrimination given their complexity. • Lack of awareness of when consumers are ‘fleeced’, especially when it’s for modest amounts collected on a large scale.

Demographic & Personal Information Enabled Dynamic Pricing – Academic Researchers	
<p>A presentation of the researcher perspective of Demographic and Personal Information enabled dynamic pricing. These are primarily individual prices based on behaviour or personal information, or targeted prices aimed at demographics.</p>	
Benefits & Opportunities	Harms & Threats
<ul style="list-style-type: none"> • Dynamic pricing and price responses could offer a considerable source of data from which to derive insights into consumer behaviour. • Such research can provide information into a more fluid economy as dynamic pricing is a key part of transactions. 	<ul style="list-style-type: none"> • Strong brand associations between business proponents and academics studying business practices may lead some to conclude academics are working for business and not consumers, especially where sensitive and attention-grabbing issues like pricing methodology are involved.
Potential to Mitigate Harm	Constraints
<ul style="list-style-type: none"> • Engendering an open discussion of such pricing. This may be one of the few ways to determine the actual facts and methods. The need for market surveillance may be heightened. 	<ul style="list-style-type: none"> • Access to data necessary to analyze such transactions and methods may be closely held by organizations unless transparency is required, whether in real-time or on an historic basis.

Demographic & Personal Information Enabled Dynamic Pricing ¹²⁹ – Standards Organizations	
<p>A presentation of the standards organization perspective of Demographic and Personal Information enabled dynamic pricing. These are primarily individual prices based on behaviour or personal information, or targeted prices aimed at demographics.</p>	
Benefits & Opportunities	Harms & Threats
<ul style="list-style-type: none"> • Create a pricing transparency standard, originating in Canada, to outline methods of dynamic pricing, including disclosure and processes. • Effort made before the chips are down to set out what the standards for dynamic pricing should be. • Market models design exists for some industry's (e.g. securities, energy utilities) but retail and most consumer services lack a suitable platform for this work, opening an opportunity for standards organizations that include consumer representation • Push Competition Bureau to begin to encourage standardization as a transition to regulation, if necessary. • Opportunity to partner with an organization like the Competition Bureau to encourage adoption of a standard and voluntary model conduct. 	<ul style="list-style-type: none"> • Standards development process hijacked concerning a matter as sensitive to consumers and business competitors as price setting, leading to discredit of standards organization.
Potential to Mitigate Harm	Constraints
<ul style="list-style-type: none"> • Standards are a very effective method for flexibly bringing about order in a rapidly changing field, and can be more quickly adopted globally, much as has taken place with online e-commerce. • Ensure highly capable, independently resourced consumer representation is included in any related standards development or maintenance processes, to guarantee against cartel-like conduct, ensure the consumer perspective is well considered, and assure the process is both legitimate and seen to be so. • OECD Consumer Policy committee guidelines can be reviewed and emulated. • Standards can be quickly portable across national boundaries through private sector implementation. • Produce a standard that could enable long-term reliance and audibility of algorithms and connect them to original transactions 	<ul style="list-style-type: none"> • This is a rapidly changing field, and while standards are more agile and quick than regulatory effort, standards setting still takes years, not months to accomplish. • Any difficulty in starting in Canada with CSA Groups, or lack of interest by Standards Council of Canada to pursue an international effort. Policy at any of CSA Group, SCC or key regulators such as Innovation, Science and Economic Development Canada and Competition Bureau could stymie such an initiative. • Businesses might not volunteer to participate. • Consumer representatives might not be supported by sufficient institutional capacity to deal with such a complex issue area, opening a standards development process to possible collusion around processes to set prices.

VI

Consumer Protection Framework Recommendations

	Consumers
<p>Safety The right to be protected against goods or services that are hazardous to health and life. The responsibility to read instructions and take precautions. To take action to choose safety equipment, use products as instructed and teach safety to children.</p>	
<p>Information The right to be given the facts needed to make an informed choice, to be protected against misleading advertising or labelling. The responsibility to search out and use available information. To take action to read and follow labels and research before purchase.</p>	<ul style="list-style-type: none"> • Seek out the facts. • Ensure you have an understanding of the benefits that such information may provide you, outside of the pricing arena. • If you choose to use private or incognito browsing ensure that you understand its particular limitations, which can vary by browser. • If a price is more than you expect, where possible, ask how the price is derived. • Be suspicious of limited inventory claims. • Be suspicious of reference prices (this is nothing new). • Where a website has inadequate information to explain pricing methods, express this to the business, and share with consumer groups or consumer protection agencies. • Take into consideration that what may be presented as distinct brands may be sold by associated sellers. Some online offers are made by lead gatherers not sellers. • Consider that the seller knows you better than yourself. Also, the seller may make wrong assumptions about you that influence the offers you receive, including the price you may be offered.

<p>Choice The right to choose products and services at competitive prices with an assurance of satisfactory quality. The responsibility to make informed and responsible choices. To take action to resist high-pressure sales and to comparison-shop.</p>	<ul style="list-style-type: none"> • Look to identify a valid reference price for the purposes of comparing prices, particularly when significant purchases are involved. • Take screen shots of prices offered and, if a subsequent price is higher, or lower, use your evidence of the price offer to inquire about getting a best price from your preferred supplier. • When purchasing, check different sites that provide the same product or service. • Don't completely rely on sites that aggregate and recommend a best price. Even for these, compare with your reference price.
<p>Representation The right to express consumer interests in the making of decisions. The responsibility to make opinions known. To take action to join an association such as the Consumers Council to make your voice heard and to encourage others to participate.</p>	<ul style="list-style-type: none"> • Inquire or complain to consumer groups when you feel you have evidence or suspicion of unfair price manipulation.
<p>Redress The right to be compensated for misrepresentation, shoddy goods or unsatisfactory services. The responsibility to fight for the quality that should be provided. Take action by complaining effectively and refusing to accept shoddy workmanship.</p>	<ul style="list-style-type: none"> • Report to the Competition Bureau or provincial government consumer protection departments where a price is unreasonably higher than can be found elsewhere, especially if that price is falsely touted as a competitive one. <p>Report suspicions of illegal price offerings, including:</p> <ul style="list-style-type: none"> • Lack of statement of purpose for collecting personal information for pricing • No consent obtained for use of personal information for pricing • Discriminatory pricing activity contrary to charter rights, e.g., race or religion • Bait and switch pricing
<p>Consumer Education The right to acquire the knowledge and skills necessary to be an informed consumer. The responsibility to take advantage of consumer education opportunities. Take action by attending seminars and workshops, work to ensure consumer education takes place in schools.</p>	<ul style="list-style-type: none"> • Plan to take advantage of traditional dynamic pricing discounts. • Be patient in purchasing – if you haven't compared prices, don't be rushed. • Consumer groups can help consumers understand what consumers should reasonable expect from a price offer.
<p>Healthy Environment The right to live and work in an environment that is neither threatening or dangerous and which permits a life of dignity and well-being. The responsibility to minimize environmental damage through careful choice and use of consumer goods and services. Take action to reduce waste, to reuse products where possible and to recycle when possible.</p>	<ul style="list-style-type: none"> • Dynamic pricing mechanisms are being introduced to encourage consumers to adapt their consumption for reasons of environmental protection. Consumers should be called upon to both be adaptable and consider both long-term and short-term benefits of these pricing methods.

<p>Privacy The right to privacy particularly as it applies to personal information. The responsibility to know how information will be used and to divulge personal information when appropriate.</p>	<ul style="list-style-type: none"> • Determine individually what personal information is of concern to you. • Read Privacy Policy Statements for purchases where amount is significant and risk is high of personal information affecting price to determine the uses of your personal information. • Consider asking businesses to remove your personal information according to their policies if you have concerns.
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	Standards Developers
<p>General</p>	<p>A standard, developed by an organization such as ISO could include:</p> <ul style="list-style-type: none"> • Sourcing of data • Transparency • Validity of Data • Privacy Issues • Features of Local Law (e.g., privacy, discrimination, anti-competition) • Advertising • Pricing methodologies and processes • Data Retention and Related Processes • Dispute Mechanisms • Marketing Synchronization
<p>Safety The right to be protected against goods or services that are hazardous to health and life. The responsibility to read instructions and take precautions. To take action to choose safety equipment, use products as instructed and teach safety to children</p>	
<p>Information The right to be given the facts needed to make an informed choice, to be protected against misleading advertising or labelling. The responsibility to search out and use available information. To take action to read and follow labels and research before purchase.</p>	<p>It is important to consumers that they are aware of pricing methods, that they are in use, and how applied, particularly when using personal information or information targeting them. They need to know the implications.</p>
<p>Choice The right to choose products and services at competitive prices with an assurance of satisfactory quality. The responsibility to make informed and responsible choices. To take action to resist high-pressure sales and to comparison-shop.</p>	<p>Having standards helps to better define what consumers should look at to determine the most qualified or trustworthy merchants. Consumers not only choose goods, but they also choose sellers. Recognizable criteria for distinguishing competing sellers facilitates competition and choice.</p>

<p>Representation The right to express consumer interests in the making of decisions. The responsibility to make opinions known. To take action to join an association such as the Consumers Council to make your voice heard and to encourage others to participate.</p>	<p>Standards developers need to take particular care that consumer representatives will be independent, highly capable and resourced through connection to expert communities with an interest in participating, as are business and government representatives.</p>
<p>Redress The right to be compensated for misrepresentation, shoddy goods or unsatisfactory services. The responsibility to fight for the quality that should be provided. Take action by complaining effectively and refusing to accept shoddy workmanship.</p>	<p>The inclusion of retention and attachment of algorithms to the actual transaction would be key to redress. Any complaint could be verified/tested. They can suggest standards of proof for after purchase price adjustments, rather than just chargebacks. Denote details on returns based on price complaints, for instance price matching. Note how to deal with complaints about differences in pricing geographically or between bricks and mortar and online.</p>
<p>Consumer Education The right to acquire the knowledge and skills necessary to be an informed consumer. The responsibility to take advantage of consumer education opportunities. Take action by attending seminars and workshops, work to ensure consumer education takes place in schools.</p>	<p>Consumers don't typically consider the questions to ask to compare pricing methodologies. A standard could provide those questions, and answers. This is similar to choosing among search engines, some of which offer greater or lesser privacy.</p>
<p>Healthy Environment The right to live and work in an environment that is neither threatening or dangerous and which permits a life of dignity and well-being. The responsibility to minimize environmental damage through careful choice and use of consumer goods and services. Take action to reduce waste, to reuse products where possible and to recycle when possible.</p>	<p>Standards organizations might look at the successes and failures of dynamic pricing approaches to nudging consumers toward behaviour in pursuit of public policy goals to help governments better understand the methods that work most consistently and to evaluate risk factors.</p>
<p>Privacy The right to privacy particularly as it applies to personal information. The responsibility to know how information will be used and to divulge personal information when appropriate.</p>	<p>Consider involvement in upcoming efforts on an ISO standard based on Privacy By Design, ensuring that such protection for use in pricing is incorporated into this standard.</p>

	Business
<p>Safety The right to be protected against goods or services that are hazardous to health and life. The responsibility to read instructions and take precautions. To take action to choose safety equipment, use products as instructed and teach safety to children</p>	

<p>Information The right to be given the facts needed to make an informed choice, to be protected against misleading advertising or labelling. The responsibility to search out and use available information. To take action to read and follow labels and research before purchase.</p>	<p>For organizations that want to compete on transparency of pricing:</p> <ul style="list-style-type: none"> • Note that you are using dynamic pricing. • Tell buyers roughly the method, and information used, and what you know about them. • Communicate more clearly to in store consumers price matching options; don't waste consumers' time
<p>Choice The right to choose products and services at competitive prices with an assurance of satisfactory quality. The responsibility to make informed and responsible choices. To take action to resist high-pressure sales and to comparison-shop.</p>	<ul style="list-style-type: none"> • Make choice of pricing methods available to consumers. At least make known that dynamic pricing is in effect and the information that it is based on. • Ensure any reference prices are current. • Make durable price offers, permitting consumers a reasonable opportunity to shop around. • Allow reasonable volume pricing.
<p>Representation The right to express consumer interests in the making of decisions. The responsibility to make opinions known. To take action to join an association such as the Consumers Council to make your voice heard and to encourage others to participate.</p>	<ul style="list-style-type: none"> • Allow consumers to provide input to the ways in which they would like their personal information to be used. • Look to consumer groups for advice.
<p>Redress The right to be compensated for misrepresentation, shoddy goods or unsatisfactory services. The responsibility to fight for the quality that should be provided. Take action by complaining effectively and refusing to accept shoddy workmanship.</p>	<ul style="list-style-type: none"> • Preserve algorithms with transactions for audit and tracking, where consumer protection and market-share authorities may need access. • Write algorithms in an auditable way with intent and effect apparent
<p>Consumer Education The right to acquire the knowledge and skills necessary to be an informed consumer. The responsibility to take advantage of consumer education opportunities. Take action by attending seminars and workshops, work to ensure consumer education takes place in schools.</p>	<ul style="list-style-type: none"> • Consumers need to be educated about the pricing methods. • Explain implications of such pricing in a meaningful and effective way – involve your marketing, training and graphic design departments.
<p>Healthy Environment The right to live and work in an environment that is neither threatening or dangerous and which permits a life of dignity and well-being. The responsibility to minimize environmental damage through careful choice and use of consumer goods and services. Take action to reduce waste, to reuse products where possible and to recycle when possible.</p>	<ul style="list-style-type: none"> • Because dynamic pricing models are increasingly being considered for use to “nudge” consumer behaviour to achieve important public policy goals related to environmental protection and affecting consumers’ historically available choices, it is important that these models be well-tested in their specific use-cases before being deployed at full scale to ensure they can achieve policy goals, which include acceptance among consumers, to avoid any significant unintended consequences.

<p>Privacy The right to privacy particularly as it applies to personal information. The responsibility to know how information will be used and to divulge personal information when appropriate.</p>	<ul style="list-style-type: none"> • Follow the spirit of PIPEDA regarding informed consent, not the lowest level of adherence, particularly if the organization states anywhere that the privacy of their customers is important to them. • Re-title categories in user-centric voice. • Make more clear at time of collecting personal information when it will be used for dynamic pricing. • Explain where personal information may be used to match with anonymized information to create a better personal view of an individual for the purposes of the merchant.
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Regulators	
<p>Safety The right to be protected against goods or services that are hazardous to health and life. The responsibility to read instructions and take precautions. To take action to choose safety equipment, use products as instructed and teach safety to children</p>	
<p>Information The right to be given the facts needed to make an informed choice, to be protected against misleading advertising or labelling. The responsibility to search out and use available information. To take action to read and follow labels and research before purchase.</p>	<ul style="list-style-type: none"> • Consider requiring the public disclosure of pricing based on anything related to demographics, individual behaviour or personal information. • Advertising guidelines should be updated to provide guidance on marketing/advertising for products with individualized pricing.
<p>Choice The right to choose products and services at competitive prices with an assurance of satisfactory quality. The responsibility to make informed and responsible choices. To take action to resist high-pressure sales and to comparison-shop.</p>	<ul style="list-style-type: none"> • Enforcement: Ensure that MSRP when made available is not abused. Fair and honest reference prices, produced with a defensible method, should only be offered for the purpose of price comparison. How a reference price is determined should be explained to the consumer and be independently verifiable if necessary.
<p>Representation The right to express consumer interests in the making of decisions. The responsibility to make opinions known. To take action to join an association such as the Consumers Council to make your voice heard and to encourage others to participate.</p>	<ul style="list-style-type: none"> • Increased support for, solicitation and collaboration with, consumer groups is key to representation. They can aggregate and distill issues in an informed, independent and objective way to determine issues truly affecting consumers.

<p>Redress The right to be compensated for misrepresentation, shoddy goods or unsatisfactory services. The responsibility to fight for the quality that should be provided. Take action by complaining effectively and refusing to accept shoddy workmanship.</p>	<ul style="list-style-type: none"> • Both the Competition Bureau and the Office of the Privacy Commissioner should consider a more structured enforcement regime, investigating retailers on a routine basis. • Consider the models of compliance and enforcement in other marketplaces, possibly the commodities marketplace. Such systems are increasingly similar to retail, as retail bases prices on individual information and requires complex knowledge and often uses opaque pricing algorithms.
<p>Consumer Education The right to acquire the knowledge and skills necessary to be an informed consumer. The responsibility to take advantage of consumer education opportunities. Take action by attending seminars and workshops, work to ensure consumer education takes place in schools. Standards provide a degree of education.</p>	<ul style="list-style-type: none"> • Determine those independent consumer groups that will seek to understand consumer behaviour and educational needs and fund them directly to do so.
<p>Healthy Environment The right to live and work in an environment that is neither threatening or dangerous and which permits a life of dignity and well-being. The responsibility to minimize environmental damage through careful choice and use of consumer goods and services. Take action to reduce waste, to reuse products where possible and to recycle when possible.</p>	<ul style="list-style-type: none"> • Regulators may be supervising dynamic pricing schemes created to address public policy objectives. Regulators should take responsibility that these methods are effective and seek, within their scope of responsibility, to make sure possibly adverse but unintended consequences for vulnerable consumers are well-known or offset as part of the pricing design.

<p>Privacy The right to privacy particularly as it applies to personal information. The responsibility to know how information will be used and to divulge personal information when appropriate.</p>	<ul style="list-style-type: none"> • Privacy regulators need to more rigorously enforce the concept of meaningful consent. • Privacy regulators should consider amending PIPEDA to require clearer indication of the use of information in pricing and tie directly specific information into specific pricing purposes, as consumers will give up privacy for marketing but are less willing to accept pricing models that work to their disadvantage. • Recommend provision of a clear grid of purpose and details of personal information when used for pricing – an issue more sensitive to many consumers than other marketing and service related purposes. • Consider an initiative to review regulations with a view to determining how they relate to price-setting and to develop specific guidelines. There is a question about whether price offers might be offered on two tracks, both of which need to be defined. One based on personal offers and one based on anonymous offers. (Derives from the notion of “right to be forgotten”, which is really a right to be unknown ahead of a purchase when the purchase doesn’t involve a seller extending credit.)
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VII

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VIII

Appendices

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Appendix I: Public Interest Network Questionnaire

| PIN Questionnaire

The Consumers Council of Canada's Public Interest Network (PIN) was consulted in the initial and final stages of this research. The first questionnaire was to identify issues to be explored and provide input to the development of the focus group discussion guide, key informant questioning, and online survey questions. The second was to obtain views on potential solutions.

| PIN One

Dynamic Pricing - Issues & Insights

Q1. What do you consider to be dynamic pricing? Please give detailed examples, and if possible, the name of the business.

Q2. For any examples you noted, what would you consider to be the BENEFIT, if any, to consumers?

Q3. For any examples you noted, what would you consider to be the HARM, if any, to consumers?

Q4. Are you aware of any dynamic pricing practices, incorporating personalized information? If so, please give details.

Q5. What concerns would you have about the use of a consumers personal information or shopping behaviours in determining prices they are offered by business?

Q6. How can businesses be more transparent in their use of dynamic pricing?

Q7. What can consumers do to protect themselves from harm or exploitation from dynamic pricing?

Q8. What government and/or regulators do in the way of legislation, regulation or enforcement to ensure consumer protection in this area?

Q9. Thank you for taking the time to fill out this survey. If you have any other thoughts please take advantage of the blank space below.

| PIN Two

Question One

Where general demographic information (e.g., wealthier neighbourhoods, older or younger neighbourhoods) is used to provide differing prices for different individuals, how can this be made more transparent to consumers? For any examples you provide, please note any relevant industry or product information.

Question Two

Where personal (private) information (e.g., purchase history/behaviour, loyalty program preferences, browsing history) is used to provide differing prices for different individuals (e.g., charging higher prices to less price conscious consumers), how can this be made more transparent to a consumer? For any examples you provide, please note any relevant industry or product information.

Question Three

Where personal information is used to determine the price offered to a consumer, how can notification and/or Privacy Policy Statements be modified, or other methods employed, to make a consumer's consent for the use of their personal information more apparent and meaningful? For any examples you provide, please note any relevant industry or product information.

Question Four

If you have any other thoughts please take advantage of the blank space below.

Appendix II: Focus Groups

| Dynamic Pricing Discussion Guide

January 2017

**Environics Research Group Limited
Focus Groups on Dynamic Pricing
Consumers' Council of Canada
Discussion agenda**

1. Introductions (10 minutes)

Welcome to the group. We want to hear your opinions. Feel free to agree or disagree. Even if you are just one person here that takes a certain point of view, you could represent many other people who feel the same way as you do.

You don't have to direct all your comments to me; you can exchange ideas and arguments with each other too.

You are being taped and observed to help me write my report, but let me assure you that what you say here is totally confidential. We are interested in what you have to say as a group and nothing you say will be attributed to you personally.

The host/hostess will pay you your incentives at the end of the session.

Let's go around the table so that each of you can tell us your name and a little bit about yourself, such as what sort of work you do and who lives with you in your house and what would be two things you most like to shop for – be they products or services.

2.0 Dynamic pricing – initial thoughts and questionnaire (20 minutes)

As you may have guessed from the questions we asked you when we invited you to this session we are going to be discussing dynamic pricing, but rest assured we will explain it in

more detail as we go along.

Dynamic pricing, is a pricing strategy in which businesses set flexible prices for products or services, also referred to as surge pricing, demand pricing, or time-based pricing, among others. Particularly when selling online, businesses can change prices quickly and often based on many factors including:

- competitor pricing,
- supply and demand,
- time of day or year,
- stock on hand,
- personal information or attributes, and
- other external factors in the market.

Dynamic pricing is a common practice in several industries such as:

- hospitality,
- travel,
- entertainment,
- public transport
- electricity,
- public transport, and
- retail.

Different industries often take different approaches to their dynamic pricing. Examples can range from a simple 20% coupon for a book, or a simple Amazon adjustment of price to match a competitor, to paying two or three times the normal taxi fare during surge pricing in an Uber taxi.

We are doing this research on behalf of the Consumers' Council of Canada which advocates for consumers. It works towards an improved marketplace for consumers in Canada. It seeks an efficient, equitable, effective and safe marketplace in which consumers are able to exercise their rights and responsibilities.

We are interested in your comments and thoughts as consumers on dynamic pricing, what is good or bad about it and how it can be improved for the benefit of consumers, and the marketplace.

I'm going to hand out a sheet of paper with some fields I want you to fill in. There is place where I want you to list two or three examples of dynamic pricing you have experienced, or

know of. Please note the name of the company and the product or service, if possible, and as well for each note what you see would be the benefit to you, or another consumer.

I also want you to jot down where indicated what your concerns you may have when it comes to the whole practice of dynamic pricing.

Take five (ten) minutes or so to complete this.

HAND OUT THE FORM, GIVING THE GROUP FIVE MINUTES TO COMPLETE

Let's discuss what people wrote down. We will be going into some of these in more detail later, but let's work around the room and get down on the flip chart the main examples and some of the benefits.

MODERATOR TO LIST ON A FLIP CHART

Let's begin with YOU and what is one you listed as an example, and its benefit. Anyone else have the same one and can add to the benefits?

MODERATOR WORKS AROUND THE ROOM GETTING OUT ONTO THE FLIPCHART THE VARIOUS TYPES OF DYNAMIC PRICING AND THE BENEFITS. IT WILL GIVE THOSE IN THE ROOM AN UNDERSTANDING OF A BROADER RANGE OF THE MORE COMMON EXAMPLES.

What concerns did anyone have about dynamic pricing in general, or any specific examples? What did you each write? Let's get those out onto the flipchart.

Is there anything listed by someone else that surprises you, and if so why?

3.0 Discussion on specific types and examples of dynamic pricing (70 minutes)

For the purposes of this discussion we are going to group dynamic pricing into two categories. Keep in mind that there are many ways to categorize dynamic pricing, so we are using these two categories solely the purpose of this session:

- A. Revenue management (supply and demand)

B. Rules based (conditional and fixed)

We will describe these in more detail in a minute.

For each of these categories we are going to ask you the following series of questions based on examples we will supply, and perhaps some of the examples you have given and which we have put up on the flipchart.

1. What do you think are the benefits to consumers?
2. Where do you think businesses can exploit consumers with this type of pricing?
3. What do you think businesses can do to protect consumers?
4. What do you think consumers can do to protect themselves?

Let's go through these two broad categories of dynamic pricing separately, going through the four questions for each. For each category I will read out a broad definition and give a couple of examples. And then we will go around the room incorporating if relevant some of the examples we set out on the flipchart.

Revenue Management:

Under Revenue Management dynamic pricing customers may pay different amounts for the same item, based primarily on supply and demand at the time of purchase. The airline industry has been doing this for roughly 20 years, with cruise ships, hotels and car rentals later jumping in.

Here are a couple of examples:

1. Example one: Airline tickets, and hotel rooms, can be different prices on different days, and often cheapest if booked early or at the last minute.
2. Example two: It's New Years Eve and the rate for an Uber cab is 3 times the standard fare because demand is so high. It may be only 1 ½ or 2 times the fare across the city or just a few kilometres away. This is called surge pricing. If too many people want a cab at any given time, the price goes up enough to reduce the demand to roughly the number of taxi's available.

Now for revenue management dynamic pricing I am going to go through those questions I just mentioned. You may want to refer back to some of the examples you had me put up on the flipchart earlier.

1. What do you think are the benefits to consumers?
2. Where do you think businesses can exploit consumers with this type of pricing?
3. What do you think businesses can do to protect consumers?
4. What do you think consumers can do to protect themselves?

Is there anything else you would like to add regarding revenue management dynamic pricing?

And now for the second broad category of dynamic pricing:

Rules based – conditional and fixed rules:

Under rules based dynamic pricing, the price for a product or service changes based on certain pre-determined factors. These factors can be fixed (time of day, day of week, season, age of consumer, students status), or variable (what a competitor is doing with their pricing, or if the food is nearing its best before date). For example restaurant industry has used this form of pricing for its “early bird” specials. Even though demand may not be there on a given Monday, the “early bird” special price will still be offered.

Here are a couple of examples:

1. Example one: Blue Jays tickets are more expensive for Canada Day and the last day of the season, than for a mid summer weekday game.
2. Example two: Amazon changes its prices for many of its products, sometimes many times a day, based on its analysis of competitors pricing.

Now for rules based dynamic pricing I am going to go through those questions I just mentioned. You may want to refer back to some of the examples you had me put up on the

flipchart earlier.

1. What do you think are the benefits to consumers?
2. Where do you think businesses can exploit consumers with this type of pricing?
3. What do you think businesses can do to protect consumers?
4. What do you think consumers can do to protect themselves?

Is there anything else you would like to add regarding rules based dynamic pricing?

Use of Personal information to dynamically change price

There is anecdotal evidence of pricing practices, that may cause a consumer to get price that is different from another consumer, for which there is not obvious reason made clear to the consumer. We will give you some examples, and would like know for each your thoughts on the benefit and/or concerns to consumers? What can consumers do to protect themselves in such cases?

MODERATOR WILL READ EACH OF THE FOUR FOLLOWING EXAMPLES AND ASK THE QUESTIONS NOTED ABOVE FOR EACH EXAMPLE.

Example one: A travel website used its knowledge of its customers' demographics to charge certain customers more for hotels. The online travel and booking site found that users who browsed on Mac devices were willing to pay up to 30 percent more for a hotel than Windows users. Orbitz took that information and automatically steered those more affluent users to more expensive options, leading to higher commissions for the lead and conversion.

ASK QUESTIONS

Example Two: An airline charged frequent flyers up to \$300 more for a ticket than they

charged an infrequent traveler. The reasoning? People who travel often are probably doing it out of necessity - for business purposes, most likely. These people need to fly and are willing (however begrudgingly) to pay more to get to where they need to go.

ASK QUESTIONS

Example Three: A travel site used browser cookies to determine whether a consumer had looked at the same flight more than once, and if so, assumed a greater interest on the part of the consumer, upped the price.

ASK QUESTIONS

Example Four: One customer, who was in close proximity to a retail outlet location (based on postal code), saw a lower price for a machine on a retailer's website than another customer who lived a few miles further from the store. The reasoning was that if someone is already close to the store, they may be enticed to make the quick drive over to pick up whatever they need if the price is low enough.

ASK QUESTIONS

Thinking about these four examples together, where a business is using your personal information to offer special pricing to you, what specifically would you want to ensure that they are using it properly and to your benefit, or at least a mutual benefit?

4.0 Other dynamic pricing issues (20 minutes)

What do you believe government or regulators can do to resolve any of the issues we have discussed

How can consumers use dynamic pricing to their advantage? Can you give us some examples?

Let's go around the table and get your final thoughts on:

What you have learned here?

What you will or may do differently going forward?
 Anything that particularly surprised you in the discussion?
 What do you each think?

EXPLAIN ANY FINAL PROCEDURES AND THANK THEM FOR THEIR PARTICIPATION.

|Toronto Participant Data

Name	Sex	Education	Age	Occupation	Income
KH	F	Completed Post Secondary	66	Retired	Under \$30K
BS	F	Completed Post Secondary	21	Sales Representative- Nike	\$100-150K
VD	F	Completed Post Secondary	40	Financial Planner	\$60-80K
LB	F	Some post Secondary	34	Social Worker- school Board	\$30-60K
AT	M	Completed High School	25	Security Guard	\$30-60K
BT	M	Graduate Degree	28	Artist	\$80-100K
TZ	M	Completed Post secondary	32	Proposal Writer- Transportation	\$80-100K
KC	F	Completed Post Secondary	30	Fundraiser- Charity	\$60-80K
RZ	F	Completed High School	33	Cashier- Retail	Under \$30K
OL	F	Completed Post Secondary	59	Project Manager- Print	\$100-150K
SR	F	Some Post Secondary	33	Educator- Public Health	\$30-60K
LS	M	Completed Post Secondary	44	Senior Analyst- Government	\$150K+
JD1	M	Some Post Secondary	20	Unemployed	\$150K+
JD2	M	Completed High School	20	Unemployed	Under \$30K

Name	Browse online to purchase...	Browsed online for to purchase recently	Purchased recently
KH	Frequently	Concert tickets, Tourist attractions, Live theater tickets, Airline tickets, Film festival tickets	Yes
BS	Frequently	Hotels/ accommodation, Concert tickets, Tourist attractions, Sporting events, Amusement park tickets, Airline tickets, Inter-city bus or train tickets, Film Festival tickets	Yes
VD	Frequently	Hotels/ accommodation, Tourist attractions, Airline tickets, Inter-city Bus or Train tickets	Yes
LB	Frequently	Hotel/ accommodation, Concert tickets, Tourist attractions, Sporting events, Live theater tickets, Airline tickets, Inter-city bus or train tickets, Film festival tickets	Yes
AT	Occasionally	Hotels/ accommodation, Concert tickets, Tourist attractions, Amusement park tickets	Yes
BT	Frequently	Hotel/ Accommodation, Concert tickets, Tourist attractions, Sporting events, Live theater tickets, Amusement park tickets, Airline tickets, Inter-city bus or Train Tickets, Film festival tickets	Yes
TZ	Frequently	Hotels/ accommodation, Concert Tickets, Tourist attractions, Live theater tickets, Airline tickets, Inter-city bus or train tickets	Yes
KC	Frequently	Hotels/ accommodation, Concert tickets, Live theater tickets, Amusement park tickets, Airline tickets, Inter-city bus or train tickets	Yes
RZ	Frequently	Airline tickets	Yes

OL	Frequently	Hotels/ accommodation, Concert tickets, Tourist attractions, Live theater tickets, Amusement park tickets, Airline tickets, Film Festival tickets	Yes
SR	Frequently	Hotels/accommodation, concert tickets, Tourist attractions, Live theater tickets, Airline tickets, Inter-city Bus or train tickets, Film Festival tickets	Yes
LS	Occasionally	Concert tickets, Tourist attractions, Sporting events Live theater tickets, Amusement park tickets, Airline tickets, Inter-city Bus or train tickets, Film Festival tickets	Yes
JD1	Occasionally	Hotels/ accommodation, Concert tickets, Sporting events, Airline tickets	Yes
JD2	Occasionally	Hotels/ accommodation, Airline tickets	Yes

| Montreal Participant Data

Name	Sex	Education	Age	Occupation	Income
JA	F	Completed High School	27	Cook	Under \$30K
GS	M	Completed High School	55	Customer Service	\$30-60K
SJ	M	Completed Post secondary	63	Retired	\$80-100K
NR	F	Graduate degree	29	Controller	\$100-150K
SZ	F	Graduate degree	23	Sales Associate and Business Owner	Refused
MD	F	Completed Post secondary	60	Retired Teacher	Refused

SR	F	Graduate degree	60	Lawyer	\$100- 150K
PD	F	Graduate degree	39	Operations- RBC	\$80- 100K
IK	M	Graduate degree	35	Language Interpreter	Under \$30K
MG	F	Graduate degree	47	Translator	\$60- 80K
DH	M	Trade School Certificate	42	Electrician	\$60- 80K

Name	Browse online to purchase...	Browsed online for to purchase recently	Purchased recently
JA	Occasionally	Live theatre tickets, Amusement park tickets, Airline tickets, Inter-city Bus or Train tickets	Yes
GS	Frequently	Hotels/accommodation, Concert tickets, Tourist attractions, Sporting events, Live theatre tickets, Airline tickets, Film Festival tickets	Yes
SJ	Frequently	Hotels/accommodation, Tourist attractions, Live theatre tickets, Amusement park tickets, Airline tickets, Inter-city Bus or Train tickets	Yes
NR	Frequently	Hotels/accommodation, Concert tickets, Tourist attractions, Sporting Events, Live theatre tickets, Airline tickets, Inter-city Bus or Train tickets, Film Festival tickets	Yes
SZ	Frequently	Hotels/accommodation, Sporting Events, Airline tickets	Yes
MD	Only on rare occasions	Live theatre tickets, Airline tickets	Yes
SR	Frequently	Hotels/accommodation, Tourist attractions, Airline tickets, Inter-city Bus or Train tickets	Yes

PD	Frequently	Hotels/accommodation, Concert tickets, Tourist attractions, Live theatre tickets, Amusement park tickets, Airline tickets, Inter-city Bus or Train tickets, Film Festival tickets	Yes
IK	Frequently	Hotels/accommodation, Concert tickets, Tourist attractions, Sporting Events, Live theatre tickets, Amusement park tickets, Airline tickets, Inter-city Bus or Train tickets, Film Festival tickets	Yes
MG	Frequently	Hotels/accommodation, Concert tickets, Sporting Events, Airline tickets	Yes
DH	Frequently	Hotels/accommodation, Sporting Events, Airline tickets	Yes

| FG Notable Quotations

General Awareness:

Specific comments about *general awareness* included:

“Dynamic pricing confuses customers. There is really no correct price anymore. All pricing is based on marketing techniques to convince shoppers they are getting a deal.”

“If demand is significant, it can price people out of the market.”

“I think if the pricing is not transparent the consumer has a greater risk of paying more than they should.”

“Prices fluctuate too often. We are not really consulted in this process. Consumers don’t get a say in these practices.”

“For subscription and loyalty programs, I need to spend at a certain threshold that my budget doesn’t often allow.”

“When prices fluctuate so much, it’s appears like the retailer is price gouging the customer.”

“What information is being collected about me to inform companies about my habits? (This is) totally unknown.”

“... you have to wait until it becomes cheaper or try to find it at the right times.”

Revenue Management vs Rules based

Specific comments about *yield management* included:

“Supply and demand factor doesn’t necessarily mean that prices will always go up.”

“If you are prepared to wing it a little, you can get some deals.”

“For a hockey game, you pay more money (for high-demand games). A lot of people want to be there, but it makes the moment more interesting.”

Specific comments about rules-based pricing included:

“(Consumers) know what to expect at a certain time and can anticipate changes if they can follow the trend.”

“You can just plan for it because you can see it coming.”

“In this case you understand the change.”

“If I have an emergency and I have to buy something, then the price will be really high.”

Example: Variable Hotel Pricing For Apple iOS vs. Windows Users

Participant comments included:

“If you assume the consumer wants the lowest price, Apple users won’t be happy with this. But if you assume the consumer wants something that is the most relevant to their life, then this is a customized shopping experience, and that’s an advantage.”

“There’s an assumption that the pricing is fair in this situation... are they being ripped off?”

“What’s good for one should be good for everybody. Just because you’re using a different device, why should you be paying more? It’s not right.”

Example: Frequent Flyer Pricing

Where airlines are seen to charge frequent flyers higher prices than others, based on the rationale that those who fly often will pay a higher price because they need to travel, and often because a business pays for the price of their ticket.

Participant comments included:

“I think that’s the reality – it isn’t always a concern for the individual who is paying and reimbursed. But it’s still information people should know – that it’s a possibility.”

“It’s not fair, but that’s business.”

“It’s not fair because they are getting the same service. They (the frequent flyers) are getting taken advantage of because it’s a necessity.”

“Business travellers are often subsidizing economy travellers. They will often travel last-minute, so they will pay any price. Plus they get better service and extra benefits.”

Example: Increasing Airfares for “Interested” Travellers

This example presented the case of an airline or travel site increasing the price of a flight

if someone has previously checked to see how much the flight cost. Previously participants identified increases in airfares as an example of dynamic pricing, but assumed it was acceptable, as it was supply and demand based.

Participant comments included:

“...that’s exploitation. ...it’s taking advantage of the consumer because they are expressing interest.”

“I think regulatory bodies should squash things like this.”

“It’s dishonest. They know you want it, so they will increase the price until you say no.”

Example: Geographic Pricing

This example presented a case where a consumer is presented with a cheaper price online than someone who lives further away from a bricks and mortar store operated by the online retail site of the store operator, based on the presumption that someone who lives nearby will be more enticed to go to the store to purchase this item if the price is low.

Participant comments included:

“If a company makes an assumption that people in this postal code won’t buy something, and it won’t go on sale or they just won’t offer it, that becomes a significant disadvantage based on your location. You didn’t ask for that, and it’s nothing you should be punished for.”

Linguistic/Cultural Differences

Participant comments included:

“There are some people who do not have smartphones or who are online. And I think about that.”

“In terms of the Internet, the fluctuation of prices and sales is much more aggressive than in person. If you go to (a particular store) they send you an e-mail for 40 percent online only. Well, the little lady who can’t travel because she’s handicapped, or she sends her neighbour to the store, she doesn’t get her 40 percent.... It would be better if the discount online was also mirrored in the stores specifically.”

“As a society, it is not responsible letting the market free.... We are conditioning and giving our stamp of approval for those behaviours, spending money on those things, rather than educating ourselves and contributing to society.”

Appendix III: Online Survey Questions

An online survey of 600 Canadians, generally reflecting Canada's population by age, gender and region, was used to assess the degree to which consumers assessed the fairness of 10 dynamic pricing practices, from practices they typically know and accept through to newer big-data and demographics-based pricing methodologies, often employed without the knowledge of consumers.

The online survey tool used makes use of the inferred demographic and location information to employ stratified sampling. Demographics are inferred from a large dataset of respondents' browser history for age, gender and geography, and matched against existing government statistical data. In our sample, 60% of respondents were male, 40% female. However, bias was removed using post-stratification weighting. This results typically in a lower root mean square error, and weight adjusted accordingly.

The questions were:

- 1) Uber, in times of high demand, increases prices to riders (often significantly) to increase supply of drivers available and reduce demand. How strongly do you AGREE or DISAGREE that this method of pricing is FAIR to consumers?
- 2) An auto repair shop gives senior citizens a 15% discount during slower times of the week. How strongly do you AGREE or DISAGREE that this method of pricing is FAIR to consumers?
- 3) The local Major League Baseball teams charges higher prices for games against the better / league LEADING and more popular teams. How strongly do you AGREE or DISAGREE that this method of pricing is FAIR to consumers?
- 4) Amazon throughout the day modifies prices based on competitors pricing. Different customers can get different prices within seconds of one another. How strongly do you AGREE or DISAGREE that this method of pricing is FAIR to consumers?
- 5) The website StubHub allows individuals to resell sports and entertainment tickets at whatever price the market will bear. How strongly do you AGREE or DISAGREE that this method of pricing is FAIR to consumers?
- 6) A pharmacy provides pricing discounts on a variety of products to Loyalty Card holders. How strongly do you AGREE or DISAGREE that this method of pricing is FAIR to consumers?
- 7) A travel site tracks web browser cookies & raises prices for those visiting a 2nd or

3rd time, assuming they have a higher interest in purchasing How strongly do you AGREE or DISAGREE that this method of pricing is FAIR to consumers?

- 8) A hotel chain will sell the identical room at different prices on two different sites - one a luxury hotel website, one a budget website. How strongly do you AGREE or DISAGREE that this method of pricing is FAIR to consumers?
- 9) A retail store charges a higher or lower price based on what they think a consumer will pay, based on the individuals purchase history and/or preferences. How strongly do you AGREE or DISAGREE that this method of pricing is FAIR to consumers?
- 10) A grocery store gives any customer a quantity discount on most products. How strongly do you AGREE or DISAGREE that this method of pricing is FAIR to consumers?

Appendix IV: Key Informants

| Key Informants

Elder, David: Lawyer, Stikeman LLP. Toronto, Ontario. (Rotman Conference on Privacy)

Cook, Tracy: Executive Director, Licensing and Standards, City of Toronto. Toronto, Ontario.

Jenkin, Michael: Former Director General Office of Consumer Affairs. Ottawa, Ontario)

Busch, Christoph: Professor. Osnabruck, Germany.

Austin, Lisa: University of Toronto. Toronto, Ontario (Rotman Conference on Privacy)

Woolford, Peter: Consultant. Retail Council of Canada. Toronto, Ontario.

Homan, Brent: Enforcement, Office of the Privacy Commissioner of Canada. Ottawa, Ontario. (Rotman Conference on Privacy)

Wootton, Tim: Owner, Rover Parking. Toronto, Ontario

Reid, Laurent: Privacy Consultant. Toronto, Ontario.

Wunderlich, John: Information Privacy & Security Expert. J. Wunderlich & Associates. Toronto, Ontario

| Key Informant Interview Guide Question Excerpts

Dynamic Pricing

Key Informant Interview Guide

(Question Excerpts)

2016/17

Consumers Council of Canada

The Research Project: Dynamic Pricing

Through research by the Consumers Council of Canada supported/funded by the Office of Consumer Affairs we are looking to answer:

What are the fundamental types of dynamic pricing?

What are the primary reasons for dynamic pricing?

What, in the context of consumer rights, are areas of potential harm or concern for consumers?

What are the responsibilities of consumers in mitigating and managing these potential harms?

What is consumer awareness around benefits and risks of dynamic pricing?

What are the barriers and issues that businesses face causing them to fail in protecting consumers rights?

Where are the areas in which business may exploit, intentionally or otherwise, consumers?

What can consumers do to protect their rights?

What can businesses do to ensure the rights of consumers?

Primary research also includes Focus Groups, a Canada-wide online survey and two PIN Surveys

Explain to the Interviewee

This is an interview, not a survey.

It should take anywhere from 20 to 45 minutes.

We are in the process of interviewing several Key Informants, including academic, business, government, review sites, consumers, related experts.

Most questions are open-ended, but there is a structure to the interview. Further questions to be asked based on the answers, or asked for further explanation on comments made.

Address terms of confidentiality. Explain who will access the information. If any statement is to be directly quoted, get the written permission of the interviewee.

Interview is looking for the interviewee's perspective, based on their expertise and experience of their profession.

In these interviews looking primarily for certain insights into the following:

Issues in the area

Marketplace descriptors

Current trends

Experiences (direct and indirect) in the area

Recommendations

Interviewees are to be asked if there is anything else that they think they will be able to provide in the course of the interview, or other individuals we should consider interviewing.

Dynamic Pricing Types, Enablers and Drivers

OUTLINE: In our research we found differing ways to classify Dynamic Pricing, and This will include looking at categories, specific types, and emerging and some of the differences between traditional and emerging. And is it the type of Dynamic Pricing or the way in which it is more accurate or exploitative or profitable.

In our research we have seen many ways of listing and categorizing Dynamic Pricing. What do you see as the broad categories?

Prompt:

Revenue management

Rules based – conditional and fixed

Personalized

Demand and supply

Yield management

What do you see as the various types of dynamic pricing within those categories?

Prompt:

Volume discount, coupons, loyalty programs

Airlines

Demand on day

Competitor response

Age / student discounts

Anticipated demand – sports tickets

Service time

Peak pricing, penetration pricing, uncertain market, segmented pricing (location normally)

What do you see as emerging Dynamic Pricing types or evolutions?

Prompt:

Airlines and hotels in particular

Wait to mention personalized pricing based on personal information

What are the driving forces behind these emerging Dynamic Pricings?

What is enabling these new Dynamic Pricing methods or models?

How are these different from the more traditional Dynamic Pricing drivers/reasons.

How do you see the difference between price and pricing transparency?

Big Data and Dynamic Pricing

There is anecdotal evidence of pricing practices, that may cause a consumer to get price that is different from another consumer, for which there is not obvious reason made clear to the consumer. For each of these what are your thoughts on the benefit and/or concerns to consumers? What can consumers do to protect themselves in such cases? These are anecdotal: are you aware of real examples like these?

ONE: A travel website used its knowledge of its customers' demographics to charge certain customers more for hotels. The online travel and booking site found that users who browsed on Mac devices were willing to pay up to 30 percent more for a hotel than Windows users. Orbitz took that information and automatically steered those more affluent users to more expensive options, leading to higher commissions for the lead and conversion.

TWO: An airline charged frequent flyers up to \$300 more for a ticket than they charged an infrequent traveler. The reasoning? People who travel often are probably doing it out of necessity - for business purposes, most likely. These people need to fly and are willing (however begrudgingly) to pay more to get to where they need to go.

THREE: A travel site used browser cookies to determine whether a consumer had looked at the same flight more than once, and if so, assumed a greater interest on the part of the consumer, upped the price.

FOUR: One customer, who was in close proximity to a retail outlet location (based on postal code), saw a lower price for a machine on a retailer's website than another customer who lived a few miles further from the store. The reasoning was that if someone is already close to the store, they may be enticed to make the quick drive over to pick up whatever they need if the price is low enough.

Thinking about these four examples together, where a business is using a consumer's personal information to offer special pricing, what specifically would you want to ensure that they are using it properly and to the consumer's benefit, or at least a mutual benefit?

Benefits and Harms of Dynamic Pricing

We are a consumer group and while our focus is on the consumer, we believe it is best served by a well-functioning and improving marketplace. Explain the eight consumer rights, explaining them to the interviewee focusing on those bolded :

Basic Needs; Safety; **Information; Choice**; Representation; Redress; **Consumer Education**; Healthy Environment & **Privacy**

We found that most consumers when asked about Dynamic Pricing in general tend to like it. You mentioned certain categories of Dynamic Pricing, looking at those categories and specific types what do you see as the benefit to the consumer?

Prompt for types they mentioned in first section

Do you believe that consumers see the true benefit of Dynamic Pricing examples?

Where do you see consumers concerned about this?

Are there concerns that you think consumers do not typically recognize?

Are there concerns that you think consumers recognize, but ignore?

Prompt for:

Consumer eagerness for a deal

Investment in the purchase process

Uber changed their surge pricing from showing the multiplier to now showing the estimated amount of the fare – of benefit or harm to consumer?

Consumer Awareness

Consumers are increasingly aware of price differences in stores and channels. But we believe they are not as aware of pricing transparency. What are your thoughts?

Explain price transparency versus pricing transparency depending on the experience and understanding of the interviewee. Use your judgement.

Is the industry or the nature of the Dynamic Pricing relevant? If so ,how?

What can consumers do to protect themselves?

What can consumers do to protect themselves?

Does it vary by nature of Dynamic Pricing?

Does it vary by industry?

Barriers and Issues for Business

Where Dynamic Pricing is considered good for consumers, how can it be difficult for business to implement. – eg.. seniors or student discounts?

Do consumers abuse any aspects of dynamic pricing? If so how?

Do businesses feel forced into using dynamic pricing? If so how?

Is technology a barrier?

Is effort to manage, particularly in smaller businesses, an issue?

What Can be Done to Protect Consumers

What can businesses do to protect consumers and their customers?

How can businesses ensure more Dynamic Pricing is beneficial to both consumers and business?

What can government do?

Is lack of enforcement of privacy and anti-competitive pricing laws/regulations an issue?

What other organizations can play an improving part?

Appendix V: Regulatory Information

| Competition Enforcement

The Competition Bureau through the *Competition Act* has four civil regime provisions, and one criminal regime provision dealing with pricing. Those under the civil regime, and potentially applicable to dynamic pricing, include:

- *false or misleading ordinary selling price* representations (74.01(2) and 74.01(3))
 - In the event that the represented ordinary price refers to the ordinary price of suppliers in the market, unless these suppliers have sold a substantial volume of the product at the represented ordinary price, or alternatively, these suppliers have offered the product for sale in good faith at the represented ordinary price, this price cannot be referenced as the ordinary price, and an issue is raised under subsection 74.01(2).
 - In the event that the represented ordinary price refers to the supplier's ordinary price, unless the supplier has sold a substantial volume of the products at the represented ordinary price, or alternatively, the supplier has offered the product for sale in good faith at the represented ordinary price, this price can not be referenced as the ordinary price, and an issue is raised under subsection 74.01(3).¹³⁰
- *bait and switch selling* (74.04)
 - Section 74.04 of the Competition Act is a civil provision. It prohibits "bait-and-switch" selling which occurs when a product is advertised at a bargain price, but is not available for sale in reasonable quantities. The provision does not apply if the advertiser can establish that the non-availability of the product was due to circumstances beyond its control, the quantity of the product obtained was reasonable, or the customer was offered a rain check when supplies were exhausted.¹³¹
- *sale above advertised price* (74.05)
 - Section 74.05 of the Competition Act is a civil provision. It prohibits the sale or rent of a product at a price higher than its advertised price. The provision does not apply if the advertised price was a mistake and the error was immediately corrected.¹³²

The criminal provision. Section 52, a general provision regarding false or misleading representations that may lead to criminal prosecution.

- "52 (1) No person shall, for the purpose of promoting, directly or indirectly, the supply or use of a product or for the purpose of promoting, directly or indirectly, any business interest, by any means whatever, knowingly or recklessly make a representation to the public that is false or misleading in a material respect."¹³³

Certain efforts at price maintenance may draw the attention of competition enforcement.

Price maintenance may occur when a supplier prevents a customer from selling a product below a minimum price by means of a threat, promise or agreement. It may also occur when a supplier refuses to supply a customer or otherwise discriminates against them because of their low pricing policy. Section 76 of the Competition Act deals with price maintenance. For the Act to apply, the following requirements must be met:

- A supplier, by means of a threat, a promise or an agreement, influences upward, or

- discourages the reduction of, the prices charged or advertised by another business that is either a customer of that supplier, or a competitor.
- A supplier refuses to supply a product to, or discriminates against, another person because of that other person's low pricing policy; and/or
 - Any person, as a condition of doing business with a supplier, induces that supplier to refuse to supply a product to another person because of that other person's low pricing policy; and
 - The conduct described above has had, is having or is likely to have an adverse effect on competition in a market.¹³⁴—

Competition enforcement may result in the event of abuse of dominant position.

The abuse of dominance provision in the Competition Act may apply when all of the following elements are met:

- The firm or group of firms has market power, generally defined as the ability to set prices above competitive levels;
- The firm or group of firms has engaged in or is engaging in a practice of anti-competitive acts, such as acts that are predatory, exclusionary or disciplinary; and
- The practice of anti-competitive acts has prevented or lessened, or is likely to prevent or lessen, competition substantially.

This could happen if, as a result of the practice of anti-competitive acts:

- prices are substantially higher; or
- product quality, choice or innovation are substantially lower.

Penalties may include an Administrative Monetary Penalty.

The Competition Bureau makes it clear that “regular price comparison claims have a powerful effect, because consumers seek out good deals.”¹³⁵— Reference pricing is key to a consumer’s decision about the value to him or her of a product or service.

In early 2017, the Competition Bureau found that HBC engaged in deceptive marketing practices by offering sleep sets at grossly inflated regular prices and then advertising deep discounts on these prices, suggesting significant deals to consumers. The Competition Act ensures that retailers do not entice consumers by making reference to an inflated regular price when advertising sales.¹³⁶—

| Advertising Standards

The Canadian Code of Advertising Standards is Canada’s self regulatory “authority” for advertisers. There are no specific references to dynamic pricing, although the following areas do have applicability:

Accuracy and Clarity

In assessing the truthfulness and accuracy of a message, advertising claim or representation under Clause 1 of the Code the concern is not with the intent of the sender or precise legality of the presentation. Rather the focus is on the message, claim or representation as received or perceived, i.e., the general impression conveyed by the advertisement.

- (a) Advertisements must not contain, or directly or by implication make, inaccurate, deceptive or otherwise misleading claims, statements, illustrations or representations.

- (b) Advertisements must not omit relevant information if the omission results in an advertisement that is deceptive or misleading.
- (c) All pertinent details of an advertisement must be clearly and understandably stated.
- (d) Disclaimers and asterisked or footnoted information must not contradict more prominent aspects of the message and should be located and presented in such a manner as to be clearly legible and/or audible.
- (e) All advertising claims and representations must be supported by competent and reliable evidence, which the advertiser will disclose to ASC upon its request.
- (f) The advertiser must be clearly identified in the advertisement, excepting the advertiser of a "teaser advertisement" as that term is defined in the Code.¹³⁷

Price Claims

- (a) No advertisement shall include deceptive price claims or discounts, unrealistic price comparisons or exaggerated claims as to worth or value. "Regular Price", "Suggested Retail Price", "Manufacturer's List Price" and "Fair Market Value" are deceptive terms when used by an advertiser to indicate a savings, unless they represent prices at which, in the market place where the advertisement appears, the advertiser actually sold a substantial volume of the advertised product or service within a reasonable period of time (such as six months) immediately before or after making the representation in the advertisement; or offered the product or service for sale in good faith for a substantial period of time (such as six months) immediately before or after making the representation in the advertisement.
- (b) Where price discounts are offered, qualifying statements such as "up to", "XX off", etc., must be in easily readable type, in close proximity to the prices quoted and, where practical, legitimate regular prices must be included.
- (c) Prices quoted in advertisements in Canadian media, other than in Canadian funds, must be so identified.¹³⁸

| Privacy Protection

Of the two federal privacy laws, the *Personal Information Protection and Electronic Documents Act* (PIPEDA) is of relevance in commercial transactions related to consumers purchasing from organizations in Canada.

The purpose of PIPEDA is set out in Section 3:

The purpose of this Part is to establish, in an era in which technology increasingly facilitates the circulation and exchange of information, rules to govern the collection, use and disclosure of personal information in a manner that recognizes the right of privacy of individuals with respect to their personal information and the need of organizations to collect, use or disclose personal information for purposes that a reasonable person would consider appropriate in the circumstances.¹³⁹

"Appropriate" purposes are further outlined in Section 5(3):

An organization may collect, use or disclose personal information only for purposes that a reasonable person would consider are appropriate in the circumstances.

PIPEDA regulates the use of personal information in commercial transactions. Schedule one applies and effectively describes all requirements, the particularly relevant parts include:

- Principle 2 – Identifying Purposes:
 - The purposes for which personal information is collected shall be identified by the organization at or before the time the information is collected.
- Principle 3 – Consent: (Excerpts)
 - The knowledge and consent of the individual are required for the collection, use, or disclosure of personal information, except where inappropriate.
 - The principle requires “knowledge and consent”. Organizations shall make a reasonable effort to ensure that the individual is advised of the purposes for which the information will be used. To make the consent meaningful, the purposes must be stated in such a manner that the individual can reasonably understand how the information will be used or disclosed.
 - The form of the consent sought by the organization may vary, depending upon the circumstances and the type of information. In determining the form of consent to use, organizations shall take into account the sensitivity of the information.
 - In obtaining consent, the reasonable expectations of the individual are also relevant.
 - Consent shall not be obtained through deception.
 - The way in which an organization seeks consent may vary, depending on the circumstances and the type of information collected. An organization should generally seek express consent when the information is likely to be considered sensitive. Implied consent would generally be appropriate when the information is less sensitive.
- Principle 9 – Individual Access:
 - Upon request, an individual shall be informed of the existence, use, and disclosure of his or her personal information and shall be given access to that information. An individual shall be able to challenge the accuracy and completeness of the information and have it amended as appropriate.

One perspective of a Canadian privacy expert is that from Ann Cavoukian, who served as Information and Privacy Commissioner of Ontario for three terms and is now executive director of the Privacy and Big Data Institute at Ryerson University. “Canadians are protected by law from misuse of their data.... In terms of how it’s actually enforced, it’s a huge world online and the resources of the Privacy Commissioner of Canada are very limited.”¹⁴⁰

| Protection Against Discrimination

Under the *Canadian Human Rights Act* (1985), “the prohibited grounds of discrimination are race, national or ethnic origin, colour, religion, age, sex, sexual orientation, gender identity or expression, marital status, family status, genetic characteristics, disability and conviction for an offence for which a pardon has been granted or in respect of which a record suspension has been ordered.”

Two sections of the discriminatory practices are relevant:

- Denying someone goods, services, facilities or accommodation.
- Providing someone goods, services, facilities or accommodation in a way that treats

them adversely and differently.¹⁴¹

| Consumer Protection

The language of provinces' general consumer protection law, with respect to prices, false, misleading, deceptive or unconscionable representation is fairly consistent across Canada, with the exception of Nova Scotia law's minimalist – some might say minimal – approach, particularly as regards price offers. This research does not nor was it intended to assess the effectiveness of protection among provinces.

Also, judicial interpretations of these laws were not considered by this research. The researchers were not legal experts and this review is intended only to lead to a general understanding of the context based on provincial law of a legal price offer.

One may observe that the principles-based approach of provincial consumer protection law with respect to fair pricing can make the assessment, pursuit or defence of a legal position with respect to these matters time consuming and costly (relative to the nature of many kinds of transactions). The approach appears to rest on the idea a fair basis for *competition between buyer and seller* is the ideal economic state, with the law addressing mostly competitive inefficiency or dishonesty.

As a result of the complexity and time consuming nature of resolving unfairness in modestly valued transactions, civil prosecution in these matters frequently defaults to class action. Also, Alberta provides for consumer groups/associations being able to pursue actions on behalf of collections of individual consumers, but reduces the likelihood of such action by creating a costs risk for plaintiff organizations. This research did not consider the extent to which consumer groups in Alberta might use or have used this provision. However, the Consumers Council of Canada has never done so.

Among the examples of what most province's laws would consider false, misleading or deceptive representations are representations:

- a specific price advantage exists, *if it does not*.
- a representation using exaggeration, innuendo or *ambiguity*.
- a representation that *misrepresents the purpose or intent* or any solicitation of or any communication with a consumer.

Merchants and regulators may wish to consider whether presentations (user interface or algorithmic model) for delivering price offers whet the appetite of a potential buyer by implying a price advantage that does not exist, creates an ambiguity with regard to reference prices, or misrepresents the purpose or intent of an online retailer's website to be a free market when it is something else.

An *unconscionable* representation is characterized commonly in provincial consumer protection law as exploiting disability, illiteracy, ignorance or the inability to understand an agreement. (In New Brunswick, the law specifically sets out that taking price advantage of a

consumer under the undue influence of alcohol is an offence.)¹⁴² Consumer protection law often prohibits offering a price that grossly exceeds the price at which similar goods or services are readily available to like consumers, perhaps based on the consumer being unable to receive much benefit from the representation surrounding the product, and such that a consumer might enter into a one-sided agreement to purchase. It intends to protect consumers from circumstances where a consumer might feel under pressure to buy.

These conditions of representation seem comprehensive in intent and, for better or worse, appear open to interpretation.

A price offer may be made on the basis of a claim of affiliation or association. An *unfair practice* is considered to result from a false, misleading or deceptive representation. This could include that the goods or services have sponsorship, approval, performance characteristics, accessories, uses, ingredients, benefits or qualities they do not have, or that supplier of the goods or services has sponsorship, approval, status, affiliation or connection the person does not have.

Any or all of these characteristics might be part of a dynamically presented price offer, and need to be considered for accuracy and clarity of presentation alone or in combination so as not to lead to misrepresentation.

While price gouging does not necessarily contravene the Competition Act, some provinces have legislation that prohibits the retail sale of products during emergencies at prices higher than charged before the situation, notably in Ontario¹⁴³ and Alberta.¹⁴⁴

The introduction in some provinces of laws governing the preservation of value in rewards programs, if expanded out to all the provinces, is changing the durability if not the tangibility of this form of discounting, although consumers still must rely upon the general provisions of consumer protection against misrepresentation as they consider the influence of these programs on their price decisions and attempt to understand their value.

Some provinces set the reasonable bounds for deviation from a price “estimate,” which amounts to a pre-sale price offer. The value of these protections is extinguished as soon as a consumer accepts an offer outside these bounds and completes a purchase. So, for example, in Alberta, a 10 percent increase from an “estimate” may violate consumer protection law, but not if a consumer accepts the higher price, anyway.

Consumer protection laws protect more or less explicitly consumers’ right to the expectation of the reasonable availability of goods and services to support a seller’s price offer. There is an expectation that where inventory is *limited*, and thus the ability to obtain the goods and services at the offer price is limited, consumers will be informed as part of the offer. Consumers generally must rely, however, on general protections around misrepresentation when supply may be *abundant or even virtually unlimited* in the context of a price offer. Specific consideration is not given in law to price offers that could lead consumers to conclude supply is limited when it is actually abundant, beyond the general

provisions concerning misrepresentation.

Quebec law prohibits the presentation of a “false” reference price in the context of a price offer.

Notably the provinces have various approaches to regulating event ticket sales, everything from preventing resale of tickets, restricting resale prices to original face values, to permitting secondary markets subject to price controls.

Notes

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²⁹ Stephens - Intouch

³⁰ http://www.investopedia.com/terms/p/price_discrimination.asp

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¹²⁴ In Quebec, under the Consumer Protection Act, retailers must post prices using individual posting prices on each product or posting of prices using barcodes and scanners. <https://www.educaloi.qc.ca/en/capsules/price-labelling-and-accuracy>

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¹³⁴ [Price maintenance - Competition Bureau](#)

¹³⁵ [Competition Bureau sues HBC over alleged deceptive regular price claims and clearance sales](#)

¹³⁶ [Competition Bureau sues HBC over alleged deceptive regular price claims and clearance sales](#)

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¹³⁹ [Personal Information Protection and Electronic Documents Act](#)

¹⁴⁰ [Retailers' use of dynamic pricing skyrockets | Toronto Star](#)

¹⁴¹ [What is discrimination? | Canadian Human Rights Commission](#)

¹⁴² One wonders whether one day consumers will be required by either of business or government to “blow to buy” along with “blow to drive” or submit to other testing, voluntary or involuntary, to evaluate core competency to make decisions. The requirement for witnessed, sworn statements of sound mind – independently observed and self-declared indications of competency – are certainly not unknown to the Canadian legal system.

¹⁴³ Bill 102, Anti-Price-Gouging Act, 2001 | Legislative Assembly of Ontario | Bills & Lawmaking | Past & Present | 37:3. Bill 102, Anti-Price-Gouging Act, 2001 | Legislative Assembly of Ontario | Bills & Lawmaking | Past & Present | 37:3. http://www.ontla.on.ca/web/bills/bills_detail.do?locale=en&BillID=881&ParlSessionID=37:3&isCurrent=false).

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