

Innovation versus Imitation Choices amid Technological Turbulence and Intense Competition: Evidence from a Canadian Historical Case

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Abstract

This paper investigates two determinants of managerial choices between product innovation and product imitation in the case of Quebec's cast iron stove industry at the beginning of the 20th century. Analyses rely on three main sources of data focused on stoves advertised in the province: newspaper and magazine advertisements published by foundries and merchants, catalogues and secondary sources. Results suggest that product imitation strategies outpaced product innovation strategies due to high technological turbulence and high competitive intensity. Implications are that further research frameworks on innovation versus imitation choices should include those two constructs.

Key Words: Innovation, imitation, Canada, Quebec, business history, foundries, strategy

Introduction

This paper investigates two determinants of managerial choices between product innovation and product imitation in the empirical context of the eastern Canadian cast iron stove industry at the beginning of the 20th century. More specifically, we examine how the technological context and the competitive environment may have shaped production decisions of foundries producing and marketing cast iron stoves in the province of Quebec at the time. Stove model imitation at the beginning of the 20th century in Canada is a phenomenon that has been known for a long time (Arthur & Ritchie, 1982; Baillargeon, 2006; Lessard, 1994). Yet, the literature remains silent as to why product imitation was so rampant, despite legal patent protection and despite customers' apparent taste for novelty that can be inferred from printed advertisements of the era.

The historical setting of this paper is interesting because it provides insights about production strategies that may not be available otherwise since most modern-day studies rely on static models, on data sets spanning relatively short periods of time, and on settings involving complex organizations. By contrast, historical analyses provide a look at simpler, purer, and less complex organizations operating in simpler environments and their long-term view tends to filter out short-lived aberrations (Holmstr m 1991:156). A historical and longitudinal look at production choices can uniquely help to identify durable regularities and to avoid broad generalizations based on of short-term contemporary evidence.

This paper is also important because it is empirical in nature. Indeed, although product innovation and imitation strategies have generated substantial attention in the literature, few empirical studies exist regarding the benefits of product copy/imitation versus innovation (Zheng Zhou, 2006). Further, most of the rare existing empirical studies (e.g., Cho et al., 1998; Golder & Tellis, 1993; Schnaars, 1994) have relied on U.S. data, which leaves open the question of the appropriateness of applying findings to other economies (Lieberman & Montgomery, 1998, p. 1122).

Literature and Research Hypotheses

From a managerial perspective, the theoretical literature on why product innovation or imitation may emerge is abundant and sits at the confluence of the strategic management, marketing and economics fields of investigation.

As early as in the 1960s, Theodore Levitt noted normatively that “a strategy of product imitation might be as profitable as a strategy of product innovation” (1966, p. 63). This viewpoint was later formalized in the literature on market leader versus market-follower strategies, with pioneer theorists such as Philip Kotler (1972). According to that perspective, the innovator develops a new product, informs the market, and distributes the new product, at a high cost. The innovative firm then benefits from a market-leader position that it hopes will provide a lasting and profitable competitive advantage. However, another firm can take advantage of a newly-developed market to launch a new product that may be a copy of, or an improvement on, the innovator’s product, without assuming high development and marketing costs (Levitt, 1996; Shaars, 1994; Shankar, Carpenter, & Krishnamurthi, 1998; Zhang & Markman, 1998). It is already known that late entrants can overtake pioneers outright (Shaars, 1994; Golder and Tellis, 1993; Zheng Zhou, 2006) or be more profitable than market leaders (Bowman & Gatignou, 1996; Carpenter & Nakamoto, 1989; Robinson & Fornell, 1985; Robinson & Min, 2002; Urban, Carter, Gaskin, & Mucha, 1986; Utterback, 1994). Less known are the market conditions that make market-followers thrive.

A market-follower’s product imitation, copying or mimicry can be observed in various shades ranging from exact clones, also called “me-too” products, to improvements on pioneer products (Schnaars, 1994; Shankar et al., 1998). Kotler (2004, p. 275) divides the market-follower strategies in four broad categories that are presented in Table 1. Zheng Zhou (2006, p. 395) further suggests that a follower’s product can be classified in more than one of the above categories.

Table 1: Market-Follower Strategies According to Kotler(2004)

Categories	Definitions
<i>Counterfeiter</i>	Duplicates the leader’s product and package and sells it on the back market or through disreputable dealers.
<i>Cloner</i>	Emulates the leader’s products, name, and packaging, with slight variations.
<i>Imitator</i>	Copies some things from the leader but maintains differentiation in terms of packaging, advertising, pricing, or location.
<i>Adapter</i>	Takes the leader’s products and adapts or improves them. The adaptor may choose to sell to different markets, but often the adapter grows into the future challenger.

From a historical standpoint, some analyses of product imitation among household goods producers are found in the material culture historiography. These studies are not grounded in theory, but rather comprise methodical observations regarding style and consumption (e.g., Auslander, 1993; Arthur and Ritchie, 1982; Berg, 1994 and 2002; Brewer and Porter, 1993; Lessard, 1994; Schammas, 1990; Styles, 1993). Based on her observations of the historical wood furniture market, Auslander (1993) argues that innovation is not always necessary to satisfy market demand for household goods. One small change in the appearance or style of a product can make the difference between commercial success and failure. It may therefore not be surprising to observe that product imitation with a concern for fashion trends is regularly the norm among manufacturers who wish to preserve their market shares (Styles, 1993, p. 545; Shamma, 1990).

It is often argued that the effectiveness of a market leadership or market-follower strategy can depend on contextual factors that are outside the firm’s control (Kerin et al., 1992; Lieberman & Montgomery, 1998; Szymanski, Troy, and Bharadwaj, 1995; Zheng Zhou, 2006). However, as already noted, contextual factors that help to explain whether innovation or imitation strategies may be best remain almost unexplored empirically (Shamsie, Phelps, and Kuperman, 2004).

One determinant of product imitation prevalence identified in modern-day studies is *technological turbulence* (Zheng Zhou, 2006), which refers to the rate of technological advances within an industry (Jaworski&Kohli, 1993). A high rate of technological turbulence tends to reduce the benefits associated with product leadership and, in turn, to increase the benefits associated with product imitation. Indeed, in contexts where the pace of technological change is high, the competitive advantages enjoyed by leaders, including production efficiency, patent protection and R&D assets (Lieberman & Montgomery, 1988) can be neutralized rapidly by imitators that develop next-generation technologies (Porter, 1980). Technological turbulence is also known to offer imitators greater variety of ways to copy and improve on existing products (Kerin et al., 1992; Schnaars, 1994). The existing literature thus leads us to hypothesize as follows: When stove technology is turbulent, imitation strategies are more prevalent and innovation strategies less prevalent (H1).

A second determinant of product imitation prevalence identified in modern-day studies is *competitive intensity* (Zheng Zhou, 2006), which refers to the degree of competition that a firm faces within the industry and is characterized by intense price wars, heavy advertising, more product alternatives, and added services (Porter, 1980). A high rate of competitive intensity tends to reduce the benefits associated with product leadership and, in turn, to increase the benefits associated with product imitation. This is because, when competitive intensity is high, all producers enter in price wars and must be far more cost-conscious (Porter, 1985). Producers consequently have an incentive to free-ride as much as possible on an innovator's costly efforts associated with product development, such as R&D, customer education or patent application (Schnaars, 1994) and to imitate existing products at a much lower cost (Day & Wensley, 1988). The existing literature thus leads us to hypothesize that: When stove competition is intense, imitation strategies are more prevalent and innovation strategies are less prevalent (H2).

We have not found in the literature additional determinants of product imitation that would not be subsets of technological turbulence or competitive intensity, such as R&D spend, customer education requirements or market share information for instance. This may be explained by our observation that most of the existing studies analyze the impact and the consequences of product imitation, as opposed to reasons why imitation occurs (e.g., Kay & Zaichkowsky, 1999; Schnaars, 1994). This limits the number of our hypotheses to two. Another reason why we have not considered additional determinants of product imitation is that our data sources are limited and would not allow for convincing assessments of subcomponents of technological turbulence and competitive intensity. Testing H1 and H2 empirically in the context of the Quebec cast iron stoves at the beginning of the 20th century requires an assessment of the technological turbulence and of the competitive intensity of that industry at the time, as well as an assessment of the extent to which product imitation was a commonly used product development and marketing strategy (hereafter referred to as "*productimitation intensity*").

Data Sources

To assess product imitation intensity, technological turbulence and competitive intensity in the Canadian cast iron stove industry at the beginning of the 20th century, the analyses rely on three main sources of data focused on the province of Quebec. The first is a sampling of newspaper and magazine advertisements of stove published by 33 foundries and 28 merchants¹ which were published in 22 Quebec newspapers between 1900 and 1914. The sample of newspapers, from which 2,553 advertisements were collected, is presented in Table 2. It was not possible to locate additional newspapers that were available to the residents of the province of Quebec at the time and that would have survived until now. The second main source of data includes catalogues² which were published and disseminated by two foundries, Bélanger and Clendinneng & Son, during the same period. The catalogues provide model pictures, descriptions, prices, and options. Finally, the third source of data consists of publications that have inventoried a number of stoves produced during that period: Arthur and Ritchie (1982), Lessard (1994) and Moussette (1983).

From those sources, a database was prepared to record, for each advertisement, the name of the advertiser, its location, the newspaper's name, the geographical area of publication, the date of publication, whether the ad was repeated over the period, the product name, the model, the slogan/description, and the price, when available. The resulting database provides an inventory of stove models advertised and sold in the province of Quebec in the early 20th century, which is presented in Appendix 1. While recording descriptions and/or slogans, attention was given to references to copy or to imitation as well as to innovation. Beyond physical similarities, slogans and descriptions regularly informed the reader as to how a producer's stove was different from others in an effort to convince of its originality.

1 The list of foundries and merchants has been collected from twenty-two English and French Quebec newspaper from 1900 to 1914. Refer to Table 2 for details on publications.

2 Catalogues from Bélanger Foundry, Montmagny, 1902, 1904, 1906, 1911, and 1913. Private collection; Catalogues from Clendinneng & Son, 1894, St-Jean-sur-Richelieu Museum.

Table 2: Sample of Quebec Province Newspapers Publishing Cast Iron Stove Advertisements between 1900 and 1914

Names	Years of Publication	Language	City	Daily(D/Weekly (W)/Monthly (M)/Annual (A)	# Ads
L'ActionCatholique	1907-1912	French	Quebec City	D	57
Almanach du Peuple	1906-1914	French	Montreal	A	13
Le Bien Public	1909-1913	French	Three Rivers	D	6
Le Canadien	1905-1913	French	Montreal	W	5
Le Cultivateur	1902-1906 & 1911-1913	French	Montreal	W	17
Le Devoir	1910-1914	French	Montreal	D	40
L'Éclair	1906	French	Quebec City	W	4
L'Événement	1910	French	Quebec City	W	91
L'Événement	1900- 1914	French	Lévis	W	6
La Maison Moderne (Magazine)	1905-1908	French	Montreal	M	28
Le Moniteur du Commerce	1900-1912	French	Quebec City	W	34
Montreal Gazette	1906-1910	English	Montreal	D	10
Montreal Herald	1905-1912	English	Montreal	W	90
Montreal Star	1900-1912	English	Montreal	D	87
La Patrie	1901, 1903, 1904, 1909 & 1910	French	Montreal	D	597
Le Peuple de Montmagny	1900-1915	French	Montmagny	D	324
La Presse	1900-1915	French	Montreal	D	21
Le Prix Courant (Magazine)	1900-1912	French	Montreal	M	70
The Quebec Chronicle	1904-1912	English	Quebec City	D	61
Québec Mercury	1902-1903	English	Quebec City	D	4
Sherbrooke Daily Record	1900-1910 & 1912	English	Sherbrooke	D	177
Le Soleil	1900-1914	French	Quebec City	D	811
Total	1900-1914				2,553

Methods and Findings

Product Imitation Intensity

As previously mentioned, product imitation in the Canadian cast iron stove industry has been already noted by some authors (Arthur and Ritchie, 1982; Baillargeon 2006; Lessard, 1994). However, while it is not difficult to identify stove models from different producers that look alike, or that even have similar names, it is not clear from the existing literature whether product imitation was anecdotal or truly as rampant as authors claim. To assess product imitation intensity, stove models inventoried in the database have been grouped by physical similarities and, within a group, classified chronologically by time of introduction to the market when the available pictorial and written information about a model was sufficient to reliably assign it into a *product imitation cluster*. We define a product imitation cluster as the set of products that includes the market innovator’s model as well as the plagiarized products made by the market-followers. In other words, for this paper, a product imitation cluster includes the stove models that are very similar. Models that do not belong to a cluster have not been plagiarized and are consequently truly original and unique on the market. The proportion of stoves that belong to product imitation clusters is an indicator of product imitation intensity.

Table 3 shows that practically all models offered on the Quebec province's market were part of product imitation clusters. All (or 100%) of the 128 stoves available on the market during the 1900 to 1914 period, and for which sufficient information was available to assess whether the stove belonged to a product imitation cluster, did indeed belong to a cluster. This suggests that product imitation intensity in the cast iron stove market was very high at the time. The assignment of stoves to product imitation clusters was made relying on researchers' assessments, which may be somewhat subjective. However, model descriptions and pictures generally left unambiguous clues. Additionally, many producers insisted on the originality of their stove models and inferred poorer quality of copied models from competitors in their advertisements, which is another indication of the high product imitation intensity of the era and of the belonging of the advertised stove to a product imitation cluster. It also mitigates possible errors attributable to researchers' subjectivity.

Table 3: Stove Models Produced in the Province of Quebec in the Early 20th Century that Belonged to Product Imitation Clusters

Sample of stove models advertised on the market	164
Stove models for which sufficient pictorial and written information is available to classify in a cluster or as a unique model	128
Stove models that belonged to a product imitation cluster	128

Source: Refer to appendix 1 for detailed categorization of each stove model in product imitation clusters

We present additional evidence of high product imitation intensity by probing some product imitation clusters in more details. Table 4 presents six product imitation clusters where we could identify the innovators and the imitators reliably. At least two points are noteworthy. First, in several instances, not only did the copiers plagiarize the physical or technological characteristics of the stoves they mimicked, but they often went as far as to imitate or even replicate the stove names. Second, it is interesting to note that the innovator in a given cluster may be the follower in another one (e.g., Bélanger). This almost suggests that strategic product imitation was accepted and institutionalized, which would certainly represent another indication of high product imitation intensity.

The most obvious product imitation cluster is that of the *Bijou* stove where models could include two or three bridges. The first *Bijou* stove was patented in 1854 by A. Naud of Deschambault, Quebec (Lessard, 1994, p. 87; Moussette, 1983). It was subsequently copied by Bernier & Bernier starting from 1871 (Figure 1), Bélanger in 1875 (Figure 2) and then St. Anselme in 1925 (Lessard, 1994, p. 87). Mr. Ronald Chabot, a specialist in the restoration of traditional Quebec woodstoves, says in an interview conducted by Michel Lessard, that *Bijou* specimens discovered on the market are of three slightly variable dimensions. This could be explained by two models being copied using cast iron plates (i.e., an original model taken apart) and not built using the wooden plates developed by the market leader (Lessard, 1994, p. 87).

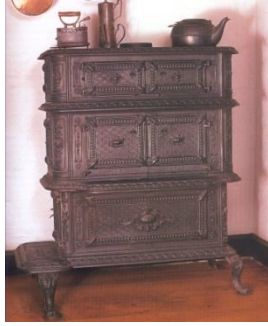
Table 4: Innovators and Followers in a Sample Cast Iron Stove Product Imitation Clusters in the Province of Quebec in the Early 20th Century*

Product Imitation Cluster Original Model	Innovator	Illustrative Follower (s)	Stove Name	Year	Plagiarised Characteristics
<i>Bijou</i>	A. Naud of Deschambault (1854)	Bernier & Bernier	<i>Bijou</i>	1871	Name, physical, technology
		Bélanger	<i>Bijou</i>	1875	Name, physical
		St. Anselme	<i>Bijou</i>	1925	Name, physical
<i>Laurentien</i>	C.H. Lepage (1904)	Bélanger	<i>St. Laurent</i>	1910	Name, physical, technology
<i>Bélanger</i>	Bélanger (1902)	Sold by Ludger Gravel Clare Bros. Co.	<i>Pilot</i>	1906	Physical
			<i>Peerless Penninsular</i>	1907	Physical
		The Thos Davidson Manufacturing, Co. Ltd.	<i>Premier</i>	1908	Physical
			<i>Marathon</i>		
		Eug. Julien & Cie	<i>Superb</i>	1911	Physical
			<i>Favorite</i>		
		C.H. Lepage	<i>Dominion</i>	1908	Physical
		P.T. Légaré	<i>Princess</i>	1910	Physical
		P.T. Légaré	<i>Majestic</i>	1912	Physical, technology
		P.T. Légaré	<i>Baby Majestic</i>	1912	Physical
<i>Pandora Range</i>	McClary (1902)	The Gurney, Tilden Co	<i>Bright Idea</i>	1904	Physical
		The Gurney, Tilden Co.	<i>Family</i>	1904	Physical
			<i>Souvenir</i>		
		C.H. Lepage	<i>Royal Montana</i>	1904	Physical, technology
		The Canadian Heating & Ventilating Co.	<i>Empire Queen</i>	1906	Physical
		Clare Bros Co.	<i>Grand</i>	1906	Physical
			<i>Penninsular</i>		
		The McClary Manufacturing Co.	<i>Kootenay</i>	1906	Physical
		Mechanics Supply Co.	<i>Peerless</i>	1907	Physical
		The Thos Davidson Manufacturing, Co. Ltd.	<i>Premier Royal</i>	1907	Physical, technology
		The Thos Davidson Manufacturing, Co. Ltd.	<i>Premier</i>	1908	Physical
			<i>Cordova</i>		
		Bélanger	<i>Royal</i>	1910	Physical
<i>Grand Universal</i>	Fonderie Clendinneng & Son (1894)	Bélanger	<i>Victor</i>	1910	Physical
<i>Légaré</i>	P.T. Légaré (1908)	C.H. Lepage	<i>Grand feu</i>	1910	Physical
		Eug. Julien & Cie	<i>Cultivateur</i>	1912	Physical

* The sample is not random. It was selected on the basis of the certainty with which the researchers could establish who were the innovators and followers.

Source: Newspaper ads (refer to Table 2); Bélanger Catalogues, 1902 and 1908; Clendinneng & Son Catalogues, 1894.

Figure 1: The *Bijou* by Bernier & Bernier



Source : Moussette, 1983.

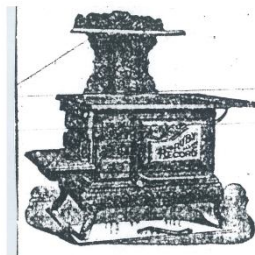
Figure 2: The *Bijou* by Bélanger



Source : Bélanger's Catalogues, 1902, Private Collection.

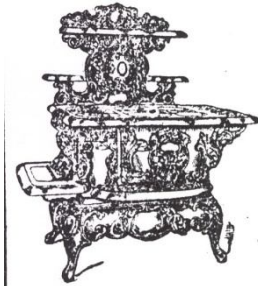
Another product imitation cluster originates from the *Laurentien* produced by C.H. Lepage starting in 1904. Mimicking C.H. Lepage, Bélanger produced in 1910 the *Saint-Laurent* that looked like the *Laurentien* and bore a very similar name. Bélanger, who had early business ties with C.H. Lepage while the latter was a retailer only, seems to have taken advantage of the popularity of the *Laurentien* to propose its own version. Similarly, the *Régal Perfection* by the Desjardins Foundry is similar to the *Régal* by the James Smart Manufacturing Co. of Brockville in Ontario. We cannot assess with certainty who was the pioneer in this case. There are also striking similarities between the *Ruby* stove (Figure 3) sold by E. Daignault, the *Perfect Idea* by Guelph Stove (Figure 4), the *Elegant Heater* by H.A. Wilder (Figure 5), the *Prince Royal*, the *Majesty* sold by N.G. Valiquette (Figures 6 and 7) and the *Prince Crawford* by Bélanger (Figure 8). Based on newspaper ads and catalogues, Bélanger seems to be the original producer of this product imitation cluster, although the model could have been copied from a foreign producer.

Figure 3: The *Ruby* sold by E. Daigneault



Source: *La Patrie*, July 2nd, 1904.

Figure 4 : The *Perfect Idea* by Guelph Stove



Source : *La Patrie*, February 19th, 1906.

Figure 5: The *Elegant Heater* by H.A. Wilder



Source : *La Patrie*, September 2nd 1908.

Figure 6: The *Majesty* sold by N.G. Valiquette



Source : *La Patrie*, April 15th, 1909

Figure 7: The *Prince Royal* sold by N.G. Valiquette



Source : *La Patrie*, April 15th, 1909

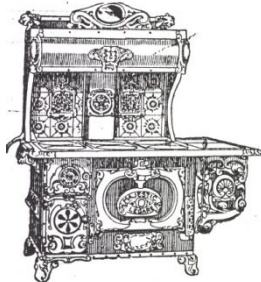
Figure 8: The *Prince Crawford* by Bélanger



Source: *Bélanger's Catalogues*, 1902, Private Collection and *Le Soleil*, October 21st, 1902.

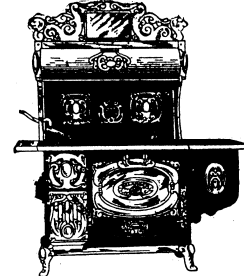
Bélanger was well known for the innovativeness of its owner-manager (Hébert, 1996) and is at the origin of another product imitation cluster. The *Majestic* by P.T. Légaré (Figure 9) looks like the *Bélanger* by Bélanger (Figure 10). Catalogues confirm that Bélanger was the innovator for this model. P.T Légaré advertised around 1910 while the Bélanger stove was advertised in several catalogues long before 1904.

Figure 9 : The *Majestic* by P.T. Légaré



Source: *The Sherbrooke Daily Record*, November 1st 1912.

Figure 10 : The *Bélanger* by Bélanger



Source: *Le Peuple de Montmagny*, September 17th, 1909 and *Le Soleil*, February 4th, 1910

Figure 11: The *Pandora Range* by McClary



Source : *Le Peuple de Montmagny*, September 12th, 1902 and *La Patrie*, October 10th, 1903.

Figure 12: The *Prime Royal* by Thos. Davidson



Source: *The Sherbrooke Daily Record*, October 1st 1908.

Figure 13: The *Royal* by Bélanger



Source : *Le Peuple de Montmagny*, Novembre 28th, 1910.

Another product imitation cluster includes the *Pandora Range* by McClary (Figure 11), the *Prime Royal* by Thos. Davidson (Figure 12), the *Dominion* by C.H. Lepage³, and the *Royal* by Bélanger (Figure 13). McClary and Bélanger were fierce competitors throughout the early 20th century. McClary seems to be the innovator in this case since it was the first producer to advertise this type of model in 1902, while Thos.Davidson⁴, Bélanger⁵ and

³Le *Soleil*, April 23rd, 1909.

⁴The *Sherbrooke Daily Record*, October 1st, 1908.

⁵Le *Peuple de Montmagny*, November 28th, 1910.

P.T. Légaré⁶ advertised no earlier than 1908, 1910, and 1912 respectively. Bélanger's *Royal* is a special case because it was not an outright copy and the ads were careful to claim it. Rather, the stove was inspired from the Pandora range but included technological improvements that were meant to adapt its performance to the province of Quebec's climate. Nevertheless, despite the ads' claims, Bélanger at the very least was among adapters.

The *Turtle* stove product imitation cluster includes models from Bernier & Bernier, La Fonderie Canadienne⁷, P.T. Légaré, I.L. Lafleur and James Smart Manufacturing Co.⁸ In this case it is very difficult to determine who the innovative producer was because it was a very common model and because all producers used the "Turtle" name that evoked the stoves' shape. Bernier & Bernier might have been the original producer since the company's accounting records show traces of the *Turtle* as far back as 1865⁹, while the advertisements for the *Turtle* from two other foundries, La Fonderie Canadienne and James Smart Manufacturing Co. started only in 1903 and 1913 respectively. Another indication of Bernier & Bernier's leadership is its large variety of *Turtle* stoves. However, this is not definitive proof of market-leadership and additional inquiry would be required.

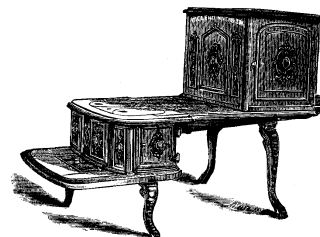
Gradin stove pictures also provide evidence of mimicry. There are several gradin stoves on the market: the *Cooker A.B.* by Bélanger (Figure 14), the *New Forest Beauty* by Cie Findlay in Ontario, the *Caledonian* and the *North West* by McClary (Lessard, 1994, p. 94) as well as the *Panama* by Clendinneng & Son (Figure 15) (Lessard, 1994, pp. 89-90). In this case too it is difficult to identify the innovator, although Clendinneng & Son's 1894 model is the earliest we could find. More product imitation clusters are observable from our pictorial data sources but the available information is insufficient to identify the time of the original introduction of these models to the Quebec market. It is also very likely that the innovator might not have been a Quebec-based manufacturer since many ads presented how unique a model was and how different it was from foreign models. It is also well documented that some producers, like Bélanger, were traveling abroad to keep abreast of technological and aesthetical trends (Hébert, 1996, p. 161), or that others, like Desjardins Foundry, were outsourcing part of their production to the United States (Lessard, 1994, p. 87).

Figure 14: *The A.B.* by Bélanger



Source : *Le Soleil*, April 8th, 1903

Figure 15: *The Panama* by Clendinneng & Son



Source: *Clendinneng & Son Catalogues*, 1894, St-Jean sur-Richelieu Museum

As an additional indication that product imitation was a popular business strategy, written data sources further suggest that innovation was not always necessary to meet demand in the cast iron stove market. Alignment with fashion trends may have been sufficient. To illustrate, some Bélanger ads claimed: "since we must follow fashion in stoves as in anything else..." (translation from French, *Le Soleil*, August 14th, 1903) or "follow the fashion of the day, buy a Laurier stove" (translation from French, *Le Soleil*, November 21st, 1900). This is consistent with Auslander's (1993) assertion that one small change in the appearance of a product could make the difference between commercial success and failure with domestic goods. When a stove was original, however, innovative producers did not miss to specify it. When Bélanger launched its *Royal* stove, it informed potential buyers that the model was "... not a copied stove: it is the first built with these proportions and with our own improvements" (translated from French, *Le Peuple de Montmagny*, November 1910).

⁶ The *Sherbrooke Daily Record*, November 1st, 1912.

⁷ *La Patrie*, October 22nd, 1903.

⁸ *Le Prix Courant*, June 20th, 1913.

⁹ General Ledgers, Bernier & Bernier, 1895-1900. Private collection.

Bélanger also specified in some ads for the *Royal* that it "is different from the others that, for the most part, are copies of U.S. models..." (translation from French, *Le Peuple de Montmagny*, January 1912), or:

Stoves that have been sold in this district to date are made according to United States patterns where climatic and employment conditions are not the same as here... We have incurred considerable costs to build our own wooden patterns for a stove perfectly adapted to the needs of our customers and to our climate (translated from French, *Le Peuple de Montmagny*, November 28th, 1910).

This example illustrates how producers were conscious of the product imitation phenomenon and did their best to take advantage of it. We have observed two predictable strategies. When producers were market leaders, they indicated it clearly in their ads to try to entice potential buyers interested in novelty or in products that were specifically adapted to the local climate. When producers were market-followers, they promoted the urge to follow fashion trends or to benefit from the improvements they were proposing on existing models. Globally our analyses suggest with very little doubt that product imitation intensity was high in the Canadian cast iron stove industry at the beginning of the 20th century. We found in most product imitation clusters that the market-follower strategies were characterized by a mix of "adapter" and "imitator" behaviours.

Technological Turbulence

To assess technological turbulence, we first analyzed the sales arguments used by advertisers to promote the functional characteristics of their stoves. Table 5 shows that well over half (58%) of the ads published over the studied period promoted technological innovations associated with a stove. This is a significant indication that the buyers were valuing, or at least were thought to value, innovation. It is also a clear indication of high technological turbulence since it would have been highly implausible to find over half the ads promoting technological advances had the rate of technological advances been low.

Table 5: Functionality Arguments Used in the Promotion of Stoves by Foundries and Merchants of the Province of Quebec, 1900-1914

Functionality Argument	Number of Ads	Percentage of Total Ads (n = 2,553)
Technological innovativeness	1,480	58%
Performance	607	34%
Durability	192	8%

Sources: Advertisements collected from twenty-two English and French newspapers from 1900 to 1914. Refer to Table 2 for source details

Another indication of high technological turbulence in the wood-burning cast iron stove industry at the time is the emergence of competing technologies, such as gas cookstoves (Figure 16) that were even often advertised adjacent to wood-burning cast iron stoves in newspapers (Figure 17). The literature on technological change in the steel and cast iron industry further indicates that years between 1890 and 1930 were transformational for the industry and that foundries were ready adopters of the evolving technologies (Heron, 1988). Mechanization progressively eliminated manual work to reduce the number of workers and costs while increasing the product standardization. Other techniques, such as the division of work and tool improvements became increasing prevalent as well (Bischoff, 1992). More specifically, tool improvements were a common solution to palliate some flaws of mechanization. For instance, sand moulds introduced in the second part of the 19th century allowed producers to keep high standards of product quality without mechanization (Andrieux, 1987; Bischoff, 1992; Beaudoin, 1984; Hardy, 1995) while reducing production costs and diversifying aesthetical possibilities.

The emergence and rise of substitute products and technologies also suggests high technological turbulence. For instance, the increasing reliance on gas for heating pushed wood-burning cast iron stove producers to improve the functionality of their products at the turn of the 20th century. The setting was ripe for such turbulence since Quebec's major cities gained access to gas between 1850 and 1860 and to electricity between 1880 and 1900.

Early versions of gas-burning stoves conceived in 1866 by Robert Rogers and Charles W. Barry (Moussette, 1983: 115) forced wood-burning stove producers to innovate to keep their clientele throughout the 1900-1914 period we analyze. But the rise of alternative technologies proved irrepressible. As the use of gas and electric stoves increasingly gained traction, noticeable declines in the use of wood-burning technologies were observed starting from 1920, mainly in large cities (Lessard, 1994: 90). Globally our analyses suggest that technological turbulence was high in the Canadian cast iron stove industry at the beginning of the 20th century. Coupled with high product imitation intensity, high technological turbulence provides support for H1.

Figure 16: McClary Gas Ranges Advertisement



Source: *The Montreal Daily Herald*, August 10th, 1908.

Figure 17: Adjacent Wood-Burning Stoves and Ranges Ad and Gas Range Ad in a Newspaper Page



Source: *The Montreal Daily Herald*, August 10th, 1908.

Competitive Intensity

To assess competitive intensity, we have inventoried the number of stove models sold in the province of Quebec at the time (Appendix 1). In total, as Table 2 shows, 152 stove models have been compiled from newspaper ads, catalogues, and private archives. Therefore, the actual number of stoves available on the province’s market was certainly even greater than 152 since not all producers were advertising using printed ads. The large number of stove models available on the market suggests that competition was intense. The significant investments in advertisement also point to high competitive intensity. Indeed, most producers were publishing elaborate ads that, in most cases, included pictures of the products, an expensive feature at the time. Cast iron stoves were also one of the first domestic items where models had a name. This marketing innovation would plausibly be the result of significant competitive intensity.

The number of foundries reached an apogee in Quebec at the turn of the 20th century; a statistic which would also suggest that competitive intensity was high at the time. One of the main reasons for the proliferation of foundries is that technological advances increasingly allowed entrepreneurs to operate a foundry without having a forge, starting as early as 1820. From a modest number of foundries in Canada in the early 1800s, they started to spread in 1840 and to abound between 1860 and 1880, making the industry one of the 40 major industries in the province of Quebec (Angers and Parenteau, 1966, p. 79; Dorion, Dubé and Lauzon, 1996). In the Quebec province, our main geographical area of investigation, the number of foundries progressed from 128 in 1880 to 155 in 1890. Foundries of all sizes continued to join the market in the early 20th century. Between 1900 and 1910 the number of foundries employing more than five employees increased from 81 to 118 in Quebec (Angers et Parenteau, 1966). The majority of Quebec’s foundries were in Quebec City, Montreal and Three-Rivers, the three largest cities, while others were located in rural areas (Beaudoin, 1984; Courville, Séguin and Robert, 1995). The life expectancy of foundries varied due to several factors such as the proximity of natural resources and transportation (rivers and railways) as well as available credit and tariff policies, in addition to more and more intense competition (Beaudoin, 1984; Bischoff, 1992, Courville, Robert and Séguin, 1995).

To add to the Quebec market's competitive intensity, producers from Ontario – the neighbouring and largest province – clearly outnumbered producers from Quebec and, in many cases, readily offered their wood-burning stoves to Quebec's consumers in the 19th and early 20th century (Bischoff, 1992, p. 39; Linteau, Durocher and Robert, 1989). Finally, a number of producers from the United States supplied their stoves to the Quebec market through merchants (Lessard, 1994, p. 94). Foreign producers were usually mass-producers. The early 20th century is the time when mass-production of stoves emerged as a transformative, game-changing, source of competition that catalyzed the decline of many small producers and the rise of market consolidation (Bliss, 1987; Norrie and Owram, 1991; Taylor and Baskerville, 1994). Aggregately, all sources of information suggest that competitive intensity was high in the Canadian cast iron stove industry at the beginning of the 20th century. Coupled with high product imitation intensity, high competitive intensity provides support for H2.

Conclusion

The literature on product innovation and imitation sits at the intersection of the strategic management, marketing and economics fields of research. Couched in a historical case setting, the results of our analyses provide support for two hypotheses and thus suggest that product imitation in Quebec's cast iron industry at the beginning of the 20th century blossomed amid significant technological turbulence and competitive intensity. A plausible explanation consistent with modern-day literature would be that the rapidly evolving stove technology and the intense competition were two factors that gave cast iron stove producers incentives to let other producers bear the high cost of technological developments and to simply and cheaply plagiarize popular stove models, thereby avoiding the potential losses associated with developing stove models that may not be successful technologically or aesthetically in a context where consumers had multiple choices of stove providers.

Those findings, which were derived mainly from a database of the foundries' marketing publications, are important because they represent one of the few empirical investigations of the determinants of product imitation versus product innovation choices. Additionally, to the best of our knowledge, this is the first such study in a Canadian historical context. The analyses have limitations however and the major one is that the corpus of data is limited to publications and other documents that have survived to this day. Many other catalogues and other promotional materials have been lost or destroyed over time. Also, although authors are confident in their conclusions regarding the introductory date of each model on the market by a market leader producer, some market leaders have been difficult to identify with absolute certainty. Some of our conclusions are consequently partly based on plausibility, a common historical research limitation (Previts, Parker and Coffman, 1990: 8-9).

Nevertheless the important sum of evidence of high product imitation intensity in the cast iron stove market makes us confident in our broad analytical conclusions. Finally, our data corpus includes advertisements published in the province of Quebec, a subset of the Canadian market that may not be reflective of the country's market as a whole, given the province's unique social, economic and geographical characteristics (Berger, 1969; Courville & Al., 1995; Dickenson and Young, 2003). While this is a noticeable caveat, it is interesting to note that this paper provides support for research hypotheses congruent with others that were developed for, and supported by, analyses of a much more remote – and contemporary – Chinese setting (see Zheng Zhou, 2006). Our results consequently provide support for the timelessness and borderlessness of the claim that product imitation is increasingly prevalent as technological turbulence and competitive intensity increase. This should inform further researchers of the necessity of adding these concepts in any research framework on innovation.

References

- Andrieux, J-Y. (1987), *Forges et Hauts Fourneaux en Bretagne du XVIIe au XIXe siècle*, Éditions du Cid, Nantes.
- Angers, F-A. and R. Parenteau (1966), *Statistiques manufacturières du Québec, 1665-1948*, Institut d'Économie Appliquée, HEC, Montréal.
- Arthur E. and Ritchie T. (1982), *Iron: Cast and Wrought Iron in Canada from the Seventeenth Century to the Present*, Toronto University Press, Toronto.
- Auslander L. (1993), "Perceptions of Beauty and the Problem of Consciousness Parisian Furniture Makers", in Berlanstein L.R. (Ed.), Illinois University Press, Chicago, pp. 149-181.
- Baillargeon, L. (2006), *Production, consommation et esthétique des objets domestiques en fonte au Québec au début du XXe siècle : le cas de trois fonderies rurales*, Ph.D. Dissertation, University of Quebec in Montreal, Montréal.
- Beaudoin, T. (1984), *Technologie artisanale de la fonte au Québec, étude d'un cas particulier : la fonderie St-Anselme*, M.A. Dissertation, Laval University, Sainte-Foy.
- Berg, M. (1994), *The age of manufactures, 1700-1820 industry, innovation, and work in Britain*, Routledge, New York.
- Berg, M. (2002), "From imitation to invention: creating commodities in eighteenth-century Britain", *Economic History Review*, Vol. 55, No. 1, pp. 1-30.
- Berger, C. (1969), *Imperialism and Nationalist, 1884-1914: A Conflict in Canadian Thought*, Copp Clark, Toronto.
- Bischoff, P. (1992), *Tension et solidarité : la formation des traditions syndicales chez les mouleurs de Montréal, Hamilton et Toronto, 1851-1893*, Ph.D. Dissertation, University of Montreal, Montreal.
- Bliss, M. (1987), *Northern Enterprise. Five Centuries of Canadian Business*, McClelland and Stewart, Toronto.
- Brewer J. and Porter R. (1993), *Consumption and the World of Goods*, Routledge Publication, New York.
- Bowman, D. and Gatignon, J. (1996), "Order of entry as a moderator of the effect of the marketing mix on market share", *Marketing Science*, Vol. 15, No. 3, pp. 222-242.
- Carpenter, G. S. and Nakamoto, K. (1989), "Consumer preference formation and pioneering advantage", *Journal of Marketing Research*, Vol. 26, No. 3, pp. 285-298.
- Cho, D. S., Kim, D. J. and Rhee, D. K. (1998), "Latercomer strategies: Evidence from the semiconductor industry in Japan and Korea", *Organization Science*, Vol. 9, No. 4, pp. 489-505.
- Courville, S., Robert J.C. and Séguin, N. (1995), *Le pays laurentien au XIXe siècle. Les morphologies de base*, Quebec Historical Atlas, Les Presses de l'Université Laval, Ste-Foy.
- Day, G. S. and Wensley, R. (1988), "Assessing advantage: A framework for diagnosing competitive superiority", *Journal of Marketing*, Vol. 52, No. 2, pp. 1-20.
- Dickenson, J. A. and Young, B. (2003), *A short History of Quebec*, McGill-Queen's University Press, Kingston, Ontario.
- Dorion, N., Dubé, F. and Lauzon, D. (1996), *Bilan des interventions industrielles. Fonction industrielle : série 3000*, Publications du Québec, Collection Patrimoine, Quebec.
- Golder, P. N. and Tellis, G. J. (1993), "Pioneering advantage: Marketing logic or marketing legend", *Journal of Marketing Research*, Vol. 30, No. 2, pp. 158-170.
- Hardy, R. (1995), *La sidérurgie dans le monde rurale : les hauts fourneaux du Québec au XIXe siècle*, Les Presses de l'Université Laval, Sainte-Foy.
- Hébert, Y. (1996), *Montmagny...une histoire, 1646-1996. La seigneurie, le village, la ville. Montmagny*, Editions Continuité, Québec.
- Heron C. (1988), *Working in Steel. The Early Years in Canada, 1883-1935*, McClelland and Stewart, Toronto.
- Holmström, B. (1991) "Comments on investing in information" In *Inside the Business Enterprise*, ed. P. Temim, 155-159, Chicago: University of Chicago Press.
- Jaworski, B. J. and Kohli, A. K. (1993), "Market orientation: Antecedents and consequences", *Journal of Marketing*, Vol. 57, No. 3, pp. 53-70.
- Kay, K. K.-Y. and Zaichkowsky, J. L. (1999), "Brand imitation: Do Chinese have different views?", *Asia Pacific Journal of Management*, Vol. 16, No. 2, pp. 179-192.
- Kerin, R. A., Varadarajan, R. R. and Peterson, R. A. (1992), "First-mover advantage: A synthesis, conceptual framework, and research propositions", *Journal of Marketing*, Vol. 56, No. 4, pp. 33-52.

- Kotler, P. (2004), *Marketing management: Analysis, planning and control*, Prentice Hall, New York.
- Lessard, M. (1994), *Objets anciens du Québec*, Les Éditions de l'Homme, Montréal, Qc.
- Levitt, T. (1966), "Innovative Imitation", *Harvard Business Review*, Sept-Oct., pp. 63-70.
- Lieberman, M. B. and Montgomery, D. B. (1988), "First-mover advantages", *Strategic Management Journal*, Vol. 9, No. 1-2, pp. 41-58.
- Lieberman, M. B. and Montgomery, D. B. (1998), "First-mover (dis)advantages: Retrospective and link with the resource-based view", *Strategic Management Journal*, Vol. 19, pp. 1111-1125.
- Linteau, P., Durocher, R. and Robert, J-C. (1989), *Histoire du Québec Contemporain. Tome I. De la Confédération à la crise (1867-1929)*, Boréal Express, Montréal.
- Moussette, M. (1983), *Le chauffage domestique au Canada. Des origines à l'industrialisation*, Laval University Press, Sainte-Foy, Quebec.
- Norrie, K. and Owsam, D. (1980), *A History of the Canadian Economy*, Harcourt Brace Jovanovich Canada, Toronto.
- Porter, M. E. (1980), *Competitive strategy*, The Free Press, New York.
- Previts, G. J., Parker, L. D. and Coffman, E. N. (1990) "Accounting history: Definition and relevance", *Abacus*, Vol. 26, No. 1, pp. 1-13.
- Robinson, W. T. and Fornell, C. (1985), "Sources of market pioneering advantages in consumer goods industries", *Journal of Marketing Research*, Vol. 22, No. 3, pp. 305-318.
- Robinson, W. T. and Min, S. (2002), "Is the first to market the first to fail? Empirical evidence for industrial goods businesses", *Journal of Marketing Research*, Vol. 34, No. 1, pp. 120-128.
- Schnaars, S. P. (1994), *Managing imitation strategies: How late entrants seize marketing from pioneers*, The Free Press, New York.
- Shammas C. (1990), *The Pre-industrial Consumer in England and America*, Clarendon Press, Oxford.
- Shankar, V., Carpenter, G. S. and Krishnamurthi, L. (1998), "Late mover advantage: How innovative late entrants outsell pioneers", *Journal of Marketing Research*, Vol. 35, No.1, pp. 54-70.
- Shankar, V., Carpenter, G. S. and Krishnamurthi, L. (1999), "The advantages of entry in the growth stage of the product life cycle: An empirical analysis", *Journal of Marketing Research*, Vol. 36, No. 2, pp. 269-276.
- Shamsie, J., Phelps, C. and Kuperman, J. (2004), "Better late than never: A study of late entrants in household electrical equipment", *Strategic Management Journal*, Vol. 25, pp. 69-84.
- Styles, J. (1993), "Manufacturing, Consumption and Design in Eighteenth-Century England", in Brewer J. & Porter R. (Ed.) *Consumption and the World of Goods*, Routledge Publication, New York, pp. 527-554.
- Szymanski, D. M., Troy, L. C. and Bharadwaj, S. G. (1995), "Order of entry and business performance: An empirical synthesis and re-examination", *Journal of Marketing*, Vol. 59, No. 4, pp. 17-33.
- Taylor, G. D., and Baskerville, P. (1994), *A Concise History of Business in Canada*, Oxford University Press, New York.
- Urban, G., Carter, T., Gaskin, S. and Mucha, Z. (1986), "Market share rewards to pioneering brands: An empirical analysis and strategic implications", *Management Science*, Vol. 32, No. 6, pp. 645-659.
- Utterback, J. M. (1994), *Mastering the dynamics of innovation*, Harvard Business School Press, Boston, MA.
- Zhang, S. and Markman, A. B. (1998), "Overcoming the early entrant advantage: The role of alignable and nonalignable difference", *Journal of Marketing Research*, Vol. 35, No. 4, pp. 413-426.
- Zheng Zhou, K. (2006), "Innovation, imitation, and new product performance: The case of China", *Industrial Marketing Management*, Vol. 35, pp. 394-402.

Appendix I: Stove Models Sold in the Province of Quebec, 1900-1914

Stove	Producer	Location	Sufficient Information to Assess Cluster	Member of a Product Imitation Cluster
Bijou	Fonderie Bélanger	Montmagny	X	A
Bijou	Fonderie Bernier & Bernier	Lotbinière	X	A
Bijou	Fonderie St-Anselme	St-Anselme	X	A
Bijou	A. Nault	Deschambault	X	A*
Colonial	La Fonderie Canadienne	Montreal	X	B
Crown Perfection	The James Smart Mfg Co.	Brockville, Ontario	X	B
Elegant	H.A. Wilder	Montreal	X	B
Emperor	The James Smart Mfg Co.	Brockville, Ontario	X	B
Governor	The Gurney, Tilden Co	Hamilton, Ontario	X	B
Honor Bright	Cie Buck de Brantford	Brantford	X	B
Howes Duchesse	C.H. Lepage	Quebec	X	B
IdealPenninsular	ClareBros Co.	Winnipeg, Manitoba	X	B
Imperial Moffat	MoffatStove Co. Ltd.	Western Ontario	X	B
King	Advertised by N.G. Valiquette	Montreal	X	B
Majesty	N.G. Valiquette	Montreal	X	B
Moffat Range	MoffatStove Co. Ltd.	Western Ontario	X	B
Pan Favorite	Findlay Bros Co. Ltd	Carleton, Ontario	X	B
PennEsther	The Record Foundry Machine Co.	Montreal	X	B
PerfectIdea	Guelph Stove Cie	Guelph, Ontario	X	B
Prince Royal	N.G. Valiquette	Montreal	X	B
Regal Perfection	Fonderie Desjardins	St-André de Kamouraska	X	B
Ruby	Advertised by E. Daigneault	Montreal	X	B
Rustic Souvenir	The Gurney, Tilden Co	Hamilton, Ontario	X	B
Treasure	John Brown & Son	Sherbrooke	X	B
Wilder Beauty	H.A. Wilder	Montreal	X	B
Prince Crawford	Fonderie Bélanger	Montmagny	X	B**
Baby Majestic	P.T. Légaré	Quebec	X	C
Dominion	C.H. Lepage	Quebec	X	C
Majestic	P.T. Légaré	Quebec	X	C
PeerlessPenninsular	ClareBros Co.	Winnipeg, Manitoba	X	C
Pilot	Sold by Ludger Gravel	Québec	X	C
Premier Marathon	The Thos Davidson Manufacturing, Co. Ltd.	Montreal	X	C
Princess	P.T. Légaré	Quebec	X	C
Superb Favorite	Eug. Julien & Cie	Quebec	X	C
Bélanger	Fonderie Bélanger	Montmagny	X	C*
Bright Idea	The Gurney, Tilden Co	Hamilton, Ontario	X	D

Empire Queen	The Canadian Heating & Ventilating Co.	Owen Sound, Ontario	X	D
Family Souvenir	The Gurney, Tilden Co.	Hamilton, Ontario	X	D
Grand Penninsular	ClareBros Co.	Winnipeg, Manitoba	X	D
Kootenay	The McClaryManufacturing Co.	London, Ontario	X	D
Peerless	MechanicsSupply Co.	Montreal	X	D
Premier Cordova	The Thos Davidson Manufacturing, Co. Ltd.	Montreal	X	D
Premier Royal	The Thos Davidson Manufacturing, Co. Ltd.	Montreal	X	D
Royal	Fonderie Bélanger	Montmagny	X	D
Royal Montana	C.H. Lepage	Quebec	X	D
Rural	P.T. Légaré	Quebec	X	D
Pandora Range	The McClaryManufacturing Co.	London, Ontario	X	D*
Caledonian	The McClaryManufacturing Co.	London, Ontario	X	E
Colon	Fonderie Bélanger	Montmagny	X	E
Harvest	The James Smart Mfg Co., Ltd	Brockville, Ontario	X	E
New Forest Beauty	Findlay Bros Co. Ltd	Carleton, Ontario	X	E
North West	The McClaryManufacturing Co.	London, Ontario	X	E
Stove A.B.	Fonderie Bélanger	Montmagny	X	E
Panama	Fonderie Clendinneng& Son	Montreal	X	E**
St-Laurent	Fonderie Bélanger	Montmagny	X	F
Laurentien	C.H. Lepage	Quebec	X	F*
Tortue	P.T. Légaré	Québec	X	G
Tortue	I.L. Lafleur	Québec	X	G
Turtle	The James Smart Mfg Co.	Brockville, Ontario	X	G
Tortue	Fonderie Bernier & Bernier	Lotbinière	X	G**
Champion Souvenir	The Gurney, Tilden Co	Hamilton, Ontario	X	H
Doric	N.G. Valiquette	Montreal	X	H
Garland	Fonderie Bélanger	Montmagny	X	H
Kerr	R. & W. Kerr	Montreal	X	H
Kitchener	The McClaryManufacturing Co.	London, Ontario	X	H
Merit	The Record Foundry Machine Co.	Montreal	X	H
Metropolitan	Metropolitan House Furnishing Co. Ltd	Montral	X	H
MonarchPenninsular	ClareBros Co.	Winnipeg, Manitoba	X	H
Prowse	Geo R. Prowse	Montreal	X	H
Radiant Home	Geo R. Prowse	Montreal	X	H
The Brilliant	A. Galarneau& Cie	Montreal	X	H
Universal	John Brown's	Sherbrooke	X	H
Champion	The McClaryManufacturing	London, Ontario	X	H**

	Co.			
Burns Perfect Range	John Burns & Co.	Montreal	X	I
Great Idea	Guelph Stove Cie	Guelph, Ontario	X	I
Huron	The Western Foundry Co. Ltd.	Wingham, Ontario	X	I
Perfect	MoffatStove Co. Ltd.	Western Ontario	X	I
Perfect	John- Burns & Co.	Montreal	X	I
Regal	R. & W. Kerr	Montreal	X	I
Regal Souvenir	The Gurney, Tilden Co	Hamilton, Ontario	X	I
2-CHARS-2	P.T. Légaré	Québec	X	J
Deux ponts	Terreau & Racine	Quebec	X	J
Duc/Duke	Fonderie Bélanger	Montmagny	X	J
Jacques Cartier	Fonderie Bernier & Bernier	Lotbinière	X	J
Laurier	Fonderie Bélanger	Montmagny	X	J
Prince of Wales	Fonderie Clendinneng& Son	Montreal	X	J
Canadien	Fonderie Clendinneng& Son	Montreal	X	J**
St-Georges	Carrier, Lainée & Cie	Québec	X	K
Sunlight	Fiset& Cie	Quebec	X	K
Grand Universal Leader	Fonderie Clendinneng& Son	Montreal	X	K**
Capital Favorite	EchenbergBros	Sherbrooke	X	L
Économe	Eusèbe Picard	Quebec	X	L
Jeanne d'Arc	The Record Foundry Machine Co.	Montreal	X	L
Premier Argus	The Thos Davidson Manufacturing, Co. Ltd.	Montreal	X	L
Record Brilliant	The Record Foundry Machine Co.	Montreal	X	L
Rhéaume	La fonderie Canadienne	Montreal	X	L
Rhéaume Laporte	La fonderie Canadienne	Montreal	X	L
Selecte	Standard Foundry Co.	Montreal	X	L
Happy Thought	Cie Buck de Brantford	Brantford	X	M
Laundry	Standard Foundry Co.	Montreal	X	M
Laundry	Fonderie Bernier & Bernier	Lotbinière	X	M
GEM	Fonderie Bélanger	Montmagny	X	N
Gem Laundry	The Gurney, Tilden Co	Hamilton, Ontario	X	N
Poêle de Barge	Fonderie Bélanger	Montmagny	X	N
Leader Square	Fonderie Clendinneng& Son	Montreal	X	N**
National Square	Fonderie Clendinneng& Son	Montreal	X	O**
Victor	Fonderie Bélanger	Montmagny	X	P
Grand Universal	Fonderie Clendinneng& Son	Montreal	X	P*
Domestic	The Canada Stove & Furniture Co.	Montreal	X	Q
DomesticSouvenir	The Gurney, Tilden Co	Hamilton, Ontario	X	Q
Great Triumph	P.T. Légaré	Quebec	X	Q
Universal Favorite	Findlay Bros Co. Ltd	Carleton, Ontario	X	Q**
Chancellor	Gurney-Massey Co. Ltd.	Toronto, Ontario	X	R
Gurney Oxford Economizer	Gurney-Massey Co. Ltd.	Toronto, Ontario	X	R

Cornwall	The McClary Manufacturing Co.	London, Ontario	X	S
Crown Favorite	Echenberg Bros	Sherbrooke	X	S
Penninsular	Clare Bros Co.	Winnipeg, Manitoba	X	S
Empire Souvenir	The Gurney, Tilden Co.	Hamilton, Ontario	X	T
Model Souvenir	The Gurney, Tilden Co.	Hamilton, Ontario	X	T
Moffat National Range	Moffat Stove Co. Ltd.	Western Ontario	X	T
Novel Souvenir	The Gurney, Tilden Co.	Hamilton, Ontario	X	T
Range Imperial Oxford	Gurney-Massey Co. Ltd.	Toronto, Ontario	X	T
Regal	The James Smart Mfg Co.	Brockville, Ontario	X	T
Souvenir	The Gurney, Tilden Co	Hamilton, Ontario	X	T
Famous Active Range	The McClary Manufacturing Co.	London, Ontario	X	T**
Cultivateur	Eug. Julien & Cie	Quebec	X	U
Grand Feu	C.H. Lepage	Quebec	X	U
Légaré	P.T. Légaré	Quebec	X	U*
Algoma	The McClary Manufacturing Co.	London, Ontario		
Amazon	Fonderie Bernier & Bernier	Lotbinière		
Art Eureka	Sold by Echenberg Bros	Sherbrooke		
Black Prince	The McClary Manufacturing Co.	London, Ontario		
Blazar	The McClary Manufacturing Co.	London, Ontario		
Brandon	The McClary Manufacturing Co.	London, Ontario		
Clendinneng Leader	Fonderie Clendinneng & Son	Montreal		
Crown	C.H. Lepage	Quebec		
Crown Favorite	Echenberg Bros.	Sherbrooke		
Crown Prince	Sold by J.N. Archambault	Montreal		
Family Banner	The Gurney, Tilden Co.	Hamilton, Ontario		
Grand Arcon	Sold by J.N. Archambault	Montreal		
Grange Cook	Fonderie Bernier & Bernier	Lotbinière		
Hamiltonian	The Gurney, Tilden Co	Hamilton, Ontario		
Highland Grand	The Record Foundry Machine Co.	Montreal		
Home Souvenir	The Gurney, Tilden Co	Hamilton, Ontario		
Ideal Souvenir	The Gurney, Tilden Co	Hamilton, Ontario		
Laundry Souvenir	The Gurney, Tilden Co	Hamilton, Ontario		
Loyal Souvenir	The Gurney, Tilden Co	Hamilton, Ontario		

Major	The Gurney, Tilden Co.	Hamilton, Ontario
Maple	The Gurney, Tilden Co.	Hamilton, Ontario
Maryboro	The McClaryManufacturing Co.	London, Ontario
McClaryArmy	The McClaryManufacturing Co..	London, Ontario
Model	The McClaryManufacturing Co.	London, Ontario
New Era	Fonderie Clendinneng& Son	Montreal
Oriental	Fonderie Clendinneng& Son	Montreal
Prairie	The McClaryManufacturing Co.	London, Ontario
Princess Royal	Fonderie Clendinneng& Son	Montreal
Queen D.	The Gurney, Tilden Co.	Hamilton, Ontario
Red Jacket	Fonderie Bernier & Bernier	Lotbinière
Roy	The McClaryManufacturing Co.	London, Ontario
Royal Empress	C.H. Lepage	Quebec
Sovereign	The Gurney, Tilden Co	Hamilton, Ontario
Union	Fonderie Bernier & Bernier	Lotbinière
VictorianDefiance	The McClaryManufacturing Co.	London, Ontario
Wild Flower	Fonderie Bernier & Bernier	Lotbinière

* Definite market leader of the product imitation cluster

** Probable (or most plausible) market leader of the product imitation cluster

Source : Newspaper ads (refer to Table 2); Bélanger catalogues, 1902 and 1908, Private collection; Clendinneng & Son catalogues, 1894, St-Jean-sur Richelieu Museum; Bernier & Bernier General Ledgers, 1895-1914, Private collection.