An Analysis of Growth Opportunities of Pre-fabricated Housing in Vietnam

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Wood 493

A Report Submitted in Partial Fulfillment of the Requirements for the Degree of Bachelor of Science in Wood Products Processing

In

The Faculty Forestry

April 8th, 2013

Abstract

This paper is an analysis of the pre-fabricated housing industry in Canada, and potential opportunities for market expansion into the South East Asian country of Vietnam. Vietnam is a rapidly growing country which has undergone tremendous economic growth in recent years. Consequently, there is a rapidly rising middle class that will undoubtedly create a large demand for housing. The pre-fabricated housing concept would be well poised to capitalize on this demand due to the numerous advantages it offers over traditional housing. The first part of this paper will describe the Canadian pre-fabricated home industry and the pre-fabricated home concept. The latter part will be a market analysis aimed to educate readers on the potential opportunities that may lie in Vietnam for expanding the Canadian pre-fabricated home industry. Based on a preliminary analysis, it appears that market conditions in the short term would likely be too risky for Canadian pre-fabricated homes to enter into the market. Vietnam is currently experiencing a housing slump and may be years away from recovery. However in the long term, growth prospects are highly favourable due to rising incomes and anticipated increases in real housing demand. Vietnam is well positioned to become a developed country in the next 20 years, and could provide an excellent opportunity for the Canadian pre-fabricated home industry.

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List of Abbreviations and Acronyms

BRICs: Brazil Russia India China South Africa

CIVETS: Colombia Indonesia Vietnam Egypt Turkey South Africa

CMHC: Canadian Mortgage and Housing Corporation

FIPA: Foreign Investment Promotion and Protection

GDP: Gross Domestic Product

NAICS: North American Industry Classification System

Next 11 Countries: Bangladesh, Egypt, Indonesia, Iran, Mexico, Nigeria, Pakistan, Philippines, Turkey South Korea, Vietnam

PPP: Purchasing Power Parity

WTO: World Trade Organization

Introduction

After the recent housing bubble collapse in the United States in 2008, it is evident that the Canadian forest products industry is extremely vulnerable to movements on the United States market. The housing crisis in the United States affected the Canadian forest products industry profoundly due to the intimate relationship between the two countries. In order to prevent such an economic hardship in the future, it may become necessary to start exploring alternative markets in emerging economies. Regional diversification may help to create a more stable economic climate for the Canadian forest products industry. Any economic downturns may affect only certain regions at any given time; therefore it is beneficial to have regional diversification to spread the risk. In addition to exploring new markets, there is also countless opportunity to utilize high technology value added wood products such as pre-fabricated housing in order to move away from an often saturated and volatile commodity market. Developing countries in Asia and Latin America represent a significant opportunity for the pre-fabricated housing industry, a culmination of rising incomes and large populations (Global Industry Analysts, 2012). Globally the demand for pre-fabricated housing is expected to reach 829,000 units by 2017 (Global Industry Analysts, 2012). Many of these pre-fabricated housing systems offer a wealth in flexibility in choosing target markets. From low-end homes to high-end homes, pre-fabricated houses could cover a wide range of market segments. Even international buyers can be reached through innovative modularization and shipping methods. An innovator in this field can be seen with Los Angeles based company Connect Homes, where modular homes can be transported worldwide using standard intermodal shipping (Hickman, 2012). Typically pre-fabricated homes are designed for the maximum allowable size for roadways, being meant to ship within a limited geographic region. Connect Homes on the other hand has designed each module to be able to fit in a standard shipping container which can be shipped anywhere in the world for $5000 (Toy, 2012). Adapting such an international strategy instantly gives access to the world's untapped emerging markets. Among the quickest growing economies is Vietnam, which has experienced spectacular growth in the recent years. Consequently, Vietnam has quickly emerged as a highly attractive country for foreign investment. With rising incomes and rising housing demand, the Canadian wood pre-fabricated home industry could have an excellent opportunity to capitalize on this rapidly developing country. In the short term, Vietnam is currently experiencing a housing slump with a glut of houses; in the longer term however, it is impossible to ignore the growth prospects of this rapidly developing country.

Introduction to Pre-fabricated Housing

Prefabrication is a construction technique in which the components of a house are assembled prior to arrival at a construction site. This is in contrast to traditional on site building practices where all of the assembly is done on the building site. Prefabrication typically uses assembly line manufacturing strategies using skilled labour and high technology (West, 2008). Due to the technology involved, pre-fabrication typically is done by modernized economies such as in North America and Europe. Pre-fabricated homes can be divided into four distinct segments: Manufactured systems, Modular systems, panelized systems, and Pre-Engineered systems (Smith, Asiz, & Gupta, 2007). Such systems vary in their degree of prefabrication and complexity. Each of these system can be seen to have trade-offs related to on site labour costs, transportation costs, and degree of design flexibility.

Figure 1 Pre-fabricated housing factory (Penn Lyon)

Types of Pre-fabricated Homes

Manufactured Systems

Manufactured systems offer the most complete prefabrication solution with the whole building essentially being complete before arrival to the building site. Interior and exterior finishes, plumbing, electrical, and mechanical systems would all be installed in the factory setting. Perhaps the most clear of example of a manufactured system would be with mobile homes (Smith, Asiz, & Gupta, 2007).

Figure 2 Manufactured housing unit (MHISC)

Modular Systems

Modular systems perform a similar function to manufactured systems, with most the building production being performed within a factory. Unlike the manufactured systems however, modular systems consist of multiple modules which are to be assembled together on site (Smith, Asiz, & Gupta, 2007).

Figure 3 Modular housing (Franzoni, 2012)

Panellized Systems

Panellized systems are even simpler in terms of the degree of prefabrication. As the name implies, Panellized systems consist of pre-fabricated floor, roof, and wall panels which are to be assembled on site. Such systems offer a higher degree of flexibility, but with a price of higher labour costs for assembly. Panellized systems also have the advantage of being able to get flat packed during transportation, thus reducing costs of transportation from the factory to the building site (Smith, Asiz, & Gupta, 2007).

Figure 4 Panellized housing system (Preston, 2012)

Pre-Engineered Systems

Pre-engineered systems have the least degree of factory prefabrication. This system consists of individual components being manufactured in the factory. Unlike traditional stick and frame construction, the components will fit together on site without any additional work required. This system can be seen to have the greatest degree of flexibility, but also with having the highest on site labour costs (Smith, Asiz, & Gupta, 2007).

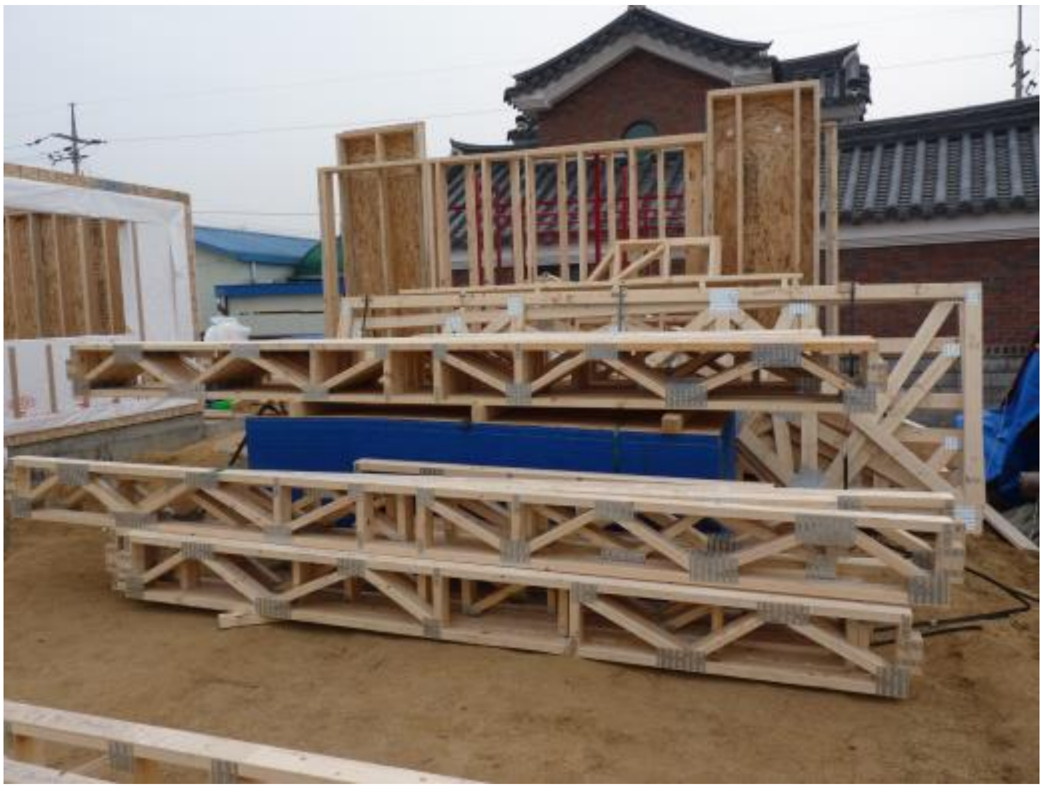

Figure 5 Pre-engineered components on site (Jeong, 2011)

Advantages of Pre-fabricated Homes

Prefabrication offers numerous advantages in comparison to traditional on site home building methods. The production benefits are numerous and include: Production in a controlled environment, Better control of inventory, Economies of scale using specialized machinery and mass manufacturing, and labour savings (CMHC, 2006). Production in a controlled environment can be especially beneficial when trying to avoid issues caused by rain in wet climates. Prefabrication can allow buildings to be very quickly assembled and covered from the outside elements. Lastly, cost savings can be significant compared to traditional stick and frame housing. With modular pre-fabricated homes, savings of up to 10-15% can be expected (Partnership for Advancing Technology in Housing, 2006).

Current Canadian Pre-fabricated Housing Industry

The Canadian pre-fabricated housing industry has traditionally been a significant contributor to the Canadian economy. In 2004, the pre-fabricated housing industry represented $700 million in domestic sales, and $197 million in export sales (Smith, Asiz, & Gupta, 2007). The wood pre-fabricated building industry (NAICS 321992) peaked in 2007 with revenues exceeding $1 billion. Between 2007 and 2010, these revenues dropped approximately 15% (Industry Canada, 2010). This compares with the roughly 27% drop in revenues during the same timeframe for the Canadian Sawmills and Wood Preservation industry (NAICS 3211) (Industry Canada, 2010). This shows that perhaps the secondary value added wood products industry is more robust in nature than the primary industry. Even during the global recession, the pre-fabricated housing industry remained relatively stable compared to the primary industry. Pre-fabricated homes typically fill two segments: low-cost housing and higher-end customized housing systems (CMHC, 2006). These two segments represent more differentiated niche markets which companies can target. Within the Canadian industry, CMHC (2006) identifies four main types of competition for companies in the pre-fabricated home sector; Competition within the same segment, competition with traditional on-site builders, competition between companies in different pre-fabricated housing segments, and international competition. It is vital that companies identify niche markets where competition is the least intense. Expanding overseas could be an effective way to enter these niche markets where competition is at a minimum.

Challenges Faced for the Canadian Pre-fabricated Housing Industry

The pre-fabricated home concept is still relatively new. Therefore, there is still a large lack of education on this concept for the general public, and there still exists a stigma about pre-fabricated homes being boring and uninspired. There can be seen to be a large public perception of pre-fabricated homes being “cheap”, garnering negative comparisons to mobile homes (Hardy). In the case of modular homes, a 2007 survey for the U.S. Department of Housing and Urban Development found a lack of knowledge on the product for consumers; only 43% of respondents were familiar with the modular home concept (Rhody, 2010). Often amplifying this image problem is damage occurring during the transportation of pre-fabricated homes, leading to further perception of being low quality homes. Despite this, there is a growing trend towards acceptance of pre-fabricated homes, especially when focusing on high end home designs (CMHC, 2006). Given the right marketing strategy, this trend of increased pre-fabricated home acceptance can be increased, and an image of a high quality product can be obtained.

Challenges can also be seen in the nature of the industry itself. Pre-fabricated manufacturing in North America can be seen as very fragmented with a multitude of small companies and few large companies. This can present challenges when companies want to expand into different markets, largely due to lack of resources related to research and development and marketing (Smith, Asiz, & Gupta, 2007). Larger companies would be more likely to have the available capital to spend on such functions. This fragmentation could be largely overcome by forming partnerships with other companies or joining an association such as the Canadian Mortgage and Housing Corporation (CMHC). This notion of cooperation would likely have to play a role in the expansion of the pre-fabricated home industry into countries such as Vietnam.

Growth Opportunities in Vietnam

Vietnam Country Profile

The CIA (2013) outlines key aspects of Vietnam in the following section. Vietnam is a communist governed country in Southeast Asia bordered by China, Laos, and Cambodia. In 2012, Vietnam had a population of 91,519,289 people, ranked 13th in the world. Vietnam's economy has rapidly transitioned since abolishment of a centrally planned economy in 1986, and as of 2012 Vietnam's GDP (PPP) equalled $320.5 billion, ranked 42nd in the wold. Vietnam is still a developing country; however due to recent economic growth the government has high hopes it will become a developed country by 2020 (BBC, 2013). Vietnam can still be seen as a largely rural based country, with only 28.8% of the population living in urban areas as of 2010. This contrasts to Canada's predominately urban population which stands at 80.6% (Trading Economics, 2010).

Figure 6 Vietnam's location within Southeast Asia (CIA, 2013)

Canada - Vietnam Relations

Canada and Vietnam have maintained strong diplomatic relations since in 1973, having strong relations in education, culture, tourism, trade and investment (VCCI, 2013). Over the last decade, there has been an increase in trade between these two countries. In 2011, $1.6 billion in goods were imported from Vietnam, and $300 million were exported. Additionally, Canadian investment in Vietnam was valued at $89 million (Government of Canada, 2012). To further promote investment in Vietnam, bilateral talks have been in place to ratify a FIPA (Foreign Investment Promotion and Protection) agreement. Once an agreement is signed, it will make investment much more attractive by providing a more predictable and certain business environment (DFAITC, 2013).

Types of Houses in Vietnam

There are a wide variety of housing types in Vietnam, each having distinct characteristics. Wood based pre-fabricated homes would not necessarily be suitable for all of these housing types. However, there is some compatibility in which wood based pre-fabricated home designs could be modified to suit local housing styles. Ly, Birkeland, & Demirbilek (2010) identify four different types of rural and urban housing in Vietnam which are defined as follows:

Urban Row House

Urban row houses are typically multi-story buildings located on long, narrow lots. These houses are often densely packed together without any space between adjacent buildings.

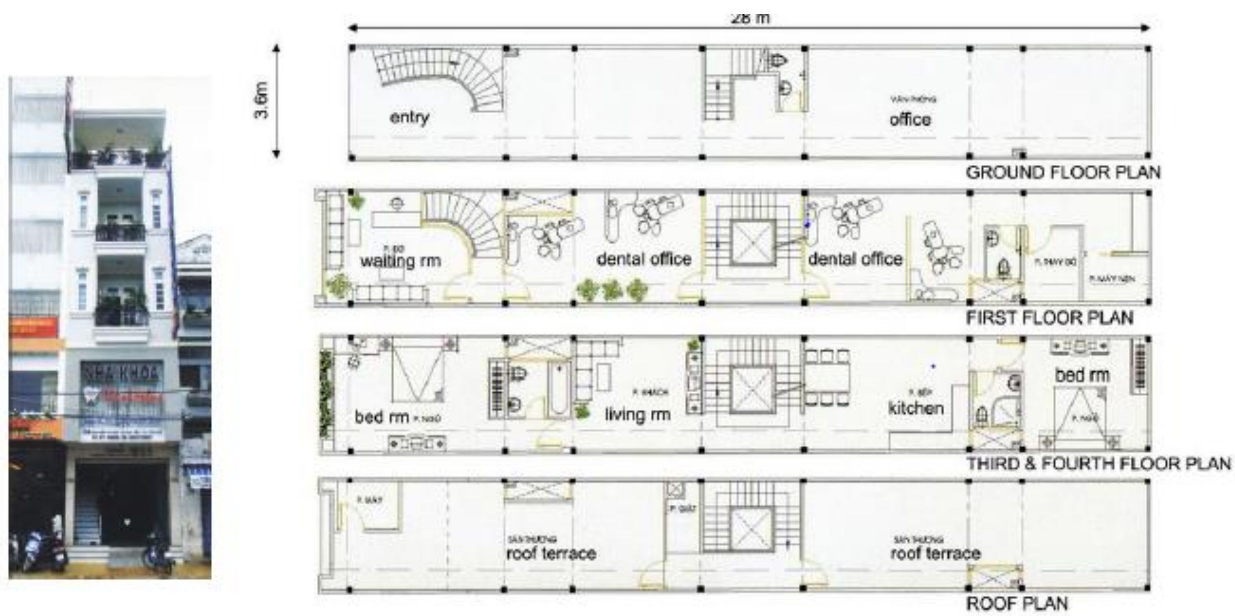

Figure 7 Row house (LY, Birkeland, & Demirbilek, 2010)

Urban Detached House

Urban detached houses, as the name implies are urban standalone buildings with a surrounding yard and a private driveway.

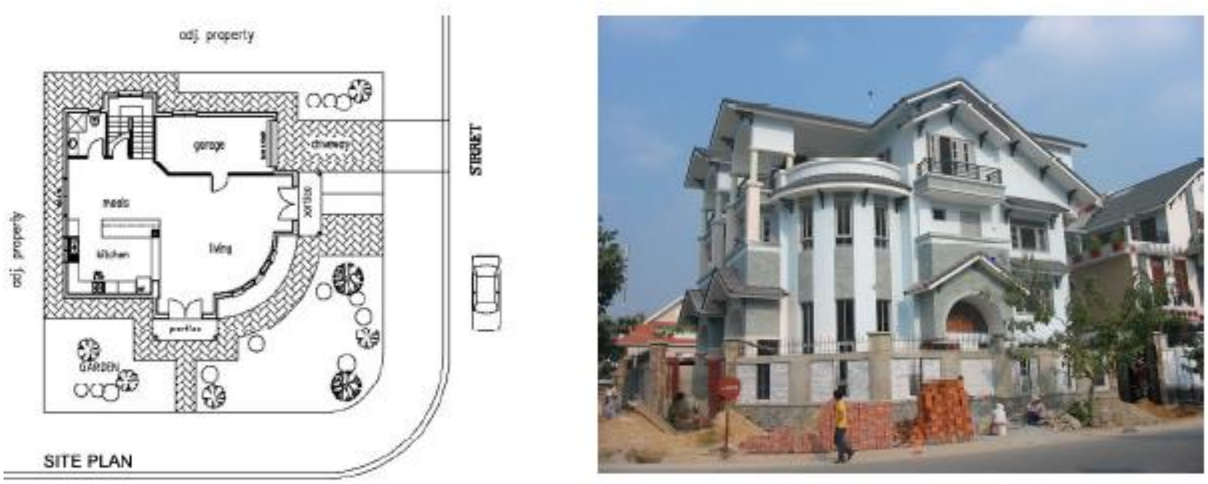

Figure 8 Urban Detached House (LY, Birkeland, & Demirbilek, 2010)

Apartment

Apartment units are contained within multi occupant buildings which contain multiple housing units. These buildings are often of the high-rise nature and are densely populated.

Figure 9 Apartments (LY, Birkeland, & Demirbilek, 2010)

Rural House

Rural houses are detached units surrounded by large areas of land. Such a property could contain many elements such as ponds, gardens, rice fields, and yards.

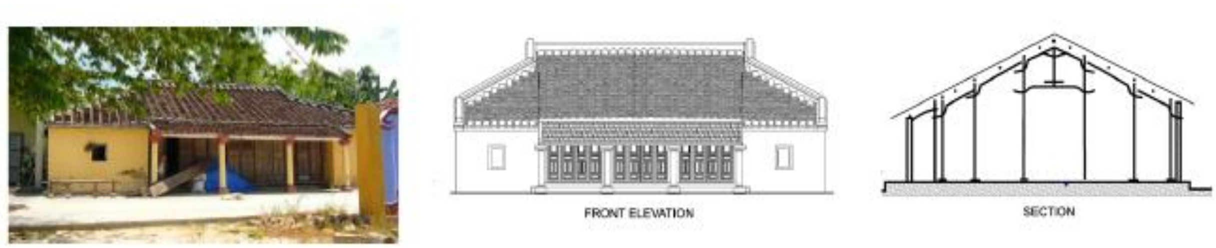

Figure 10 Rural House (LY, Birkeland, & Demirbilek, 2010)

Pre-fabricated wood buildings would likely adapt well to the urban detached house, and rural house categories. Urban row houses and apartment buildings are often of the mid-high rise nature thus wouldn’t be suitable for most wooden pre-fabricated systems based on height constraints. Companies should therefore target the urban detached and rural housing segments.

Vietnam Market Analysis

Vietnam is often seen as being one of the fastest growing economies in the world, and has a highly attractive economic base for investment. In regards to foreign investment, Vietnam is one of the top 10 destinations in the world (Bowman, 2011). It has been listed as one of Goldman Sach’s “Next 11” world economies which represent countries with the highest growth potentials after the BRICs countries (Euromonitor International, 2008). Vietnam is also included in the list of CIVETS countries; this list includes Colombia, Indonesia, Egypt, Turkey, and South Africa, all of which are countries which have exceptional economic growth and excellent investment opportunities for business (Arno, 2012). Furthermore, in 2010 Vietnam was the third fastest growing economy in its region after China and India, with Goldman Sachs estimating that the GDP per capita will double in the next 12 years (Bowman, 2011). This figure is echoed in an estimate by Euromonitor in Figure 11 on page 14. Many economists contend that countries such as Vietnam are rife with opportunity, and represent tremendous opportunity due to a relatively unsaturated market environment (Arno, 2012). In other words, it is easier to take advantage of opportunities by being a front runner in expanding economic reach into these countries. In the coming years there will be significant opportunities for Canadian pre-fabricated home companies to expand into the growing Vietnamese affordable housing and vacation home segments which will be discussed further.

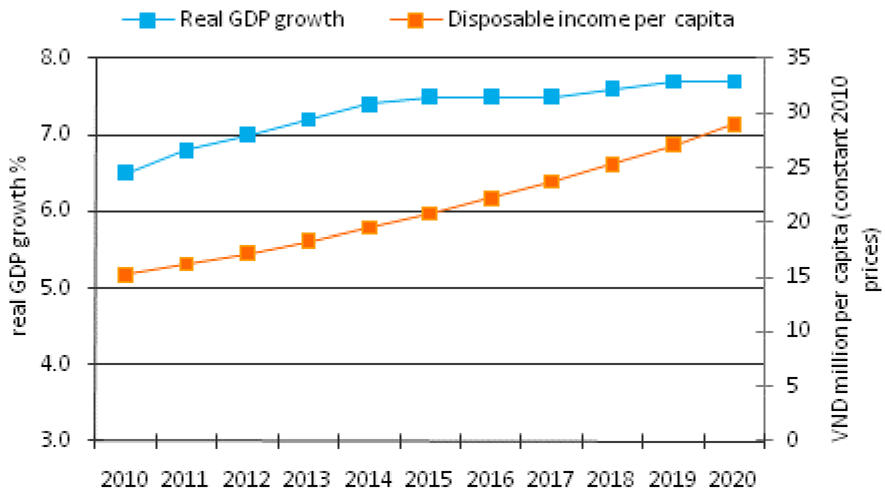

Figure 11 Real GDP growth and disposable income per capita to 2020 (Euromonitor, 2011)

Affordable Housing

One of the biggest real estate segments in Vietnam can be seen in the affordable housing sector. With the rising middle class, many Vietnamese are now looking to own their own houses. Many experts predict that there will be a real estate boom in this market in 2013. The caveat comes in the fact that this boom is in an oversupplied market with an excess of inventory houses which are too expensive for potential house buyers to afford. One estimate has a period of 1.5 to 4 years to sell all of these excess homes (dtinews, 2013). There is undoubtedly still a significant demand for affordable housing, however the prices still remain out of reach for most of the people who need housing the most (Thanh Nien News, 2012). The Canadian pre-fabricated home industry could potentially compete in this sector if prices are driven down to affordable levels. The real demand for housing does exist; however the prices of houses were driven up artificially based on speculation buying, thus being too expensive for the people who created the demand in the first place (Dang, Nguyen, Quan, & Vu, 2010). True affordable pre-fabricated housing systems could potentially satisfy this demand. However, given the volatility of the market, it also may be a safer option to wait until the oversupply of houses eases and the market stabilizes. In any case, longer term future demand is likely to increase based on the rising incomes in Vietnam.

Vacation Homes

In addition to affordable housing, there is also tremendous opportunity to market towards the young and affluent Vietnamese in the coming years. The demand for vacation real estate can be seen to be on the rise as many of these buyers are looking for secondary properties to stay outside of the city on the weekends (Euromonitor International, 2013). In the opinion of consulting company CB Richard Ellis, this can be seen as a relatively untouched market with demand exceeding supply (Property Wire, 2010). This market segment would be of particular interest as many of these vacation properties would be of the single and detached variety. Using innovate pre-fabricated housing designs, architects could create elegant modern looking designs that would be highly appealing to affluent consumers. Such designs could command a premium price from luxury minded individuals who want houses which represent the pinnacle of luxury. Vacation home designs such as in Figure 12 on page 16 could be easily be adapted into a pre-fabricated system. Vacation homes need not to be overly complicated. Affluent buyers would likely look for designs that exude a luxury image for their home away from home. A parallel example of this luxury home segment can be seen in the rapidly developing Indian market. New Zealand based Lockwood International is one company that successfully introduced the wooden pre-fabricated home concept to the luxury Indian market (Rai, 2008). India can be seen a similar market to Vietnam, sharing similar economic, social, and environmental conditions. Therefore many of the strategies for introducing pre-fabricated homes to the Indian market could be also be adapted to fit the Vietnamese market.

Figure 12 Con Son Island, Vietnam vacation home (Wall Street Journal, 2012)

Market Competition in Vietnam

When expanding into new markets there will likely be barriers to entry, however there will also be competitive advantages that Canadian companies could use over local Vietnamese competition. A report by Stoxplus (2012) identifies a major market gap in housing construction that Canadian pre-fabricated home companies could take advantage of. Typically most detached Vietnamese houses are simple structures made out of brick and mortar. Most of these houses do not require any special skills and are built by families who contract out work to independent small scale builders, thus making house building a highly fragmented market. The market gap exists in the fact that there are no large companies that specialize in house building. Even within the numerous large high rise property developments, there are often still single detached houses mixed in. The Canadian pre-fabricated housing industry could exploit this market gap, and fill a unique niche in the Vietnamese housing industry for high quality house builders. The major hurdle may lie in moving public perceptions towards the use of wood. Traditional style detached Vietnamese homes are typically constructed using bricks and mortar which may create some initial apprehension about wood based buildings (Dezeen, 2012). Additionally, Canadian pre-fabricated housing companies would have to overcome the barrier to entry related to unfamiliarity of the local Vietnamese building codes.

In examining financial competiveness, comparisons can be made between average selling prices in Vietnam and in North America. According to a DTZ Research report, asking prices for affordable housing in Vietnam had a range from \$46/ft² to \$88/ft²; Mid-ranged housing had a range from \$88/ft² to \$158/ft²; High-end housing was above \$158/ft² (Global Property Guide, 2012). In the North American market, one could expect to pay between \$40/ft² to \$80/ft² for a manufactured home, and between \$90/ft² to \$150/ft² for modular houses (Modular Today). Based on these values, it would seem that Canadian pre-fabricated housing companies could still remain competitive in this foreign market.

Current Vietnamese Economic Situation

Vietnam is a member of the WTO, having joined in 2007. Even during the global financial crisis, Vietnam experienced a 5% growth rate in 2009 (Breu, Salsberg, & Tú, 2010). Vietnam's middle class is a rapidly rising demographic segment with 14.6 million people, expected to rise to 21.5 million in a few years (Andrew & Yali, 2012). This rising middle class has a large untapped potential for growth, and many foreign companies are starting to take notice. An example of this can be seen with Starbucks, who decided to open its first store in Vietnam in February 2013 (Warc News, 2013). This middle class will undoubtedly spur the demand for affordable housing in coming years.

Vietnamese Real Estate Slump

As stated previously, in the last few years Vietnam's real estate market has experienced a prolonged slump. After realizing skyrocketing returns of 200-300% in 2007, high inflation, high interest rates, and lending curbing have all put Vietnam's real estate market into a slump in which signs of a full recovery still have not been realized (Ruwitch & Thuy, 2011). Adding to the problems was speculation based buying which drove real estate to artificially high prices out of the reach of many buyers (Dang, Nguyen, Quan, & Vu, 2010). In 2012, luxury apartments were down by 40%, Mid-range apartments were down by 30%, and low-range apartments were down by 27% (Global Property Guide, 2012). The Vietnam Real Estate Association predicts such a slump may need up to 3 to 5 years to recover (Chau, 2013).

Future Outlook of Real Estate Market

Despite these recent setbacks, there are still reasons to be optimistic about the Vietnamese housing situation. Research done by RNCOS paints a more optimistic picture after this prolonged stagnation, and predicts that the housing market will rebound by 2015 due to increasing demand. Furthermore, this report points to declining interest rates for housing loans as an additional driver for a housing market rebound (M2 PressWire, 2013). This sentiment is echoed by Robert Johnson, from real estate company Cushman & Wakefield, who believes the market will bottom out during the first half of 2013, and will start displaying recovery during the tail end of this year (Vietnam Investment Review, 2013). Confidence in a rebound still remains high, and foreign investment in the Vietnamese real estate market still remains strong and attractive due to stable economic growth, a young population, and fast urbanization rate (VIETNB, 2012). There is still a tremendous demand for affordable housing; it will just be a question of when the artificially high prices will come down enough for people to afford them. The low-range segment seems to be especially poised with high demand. In the third quarter of 2012, almost 80% of units sold in Hanoi were in the low-range segment (Thanh Nien News, 2013).

Implementation

Market Penetration Strategies

Despite pre-fabricated homes gaining acceptance in North America and Europe, in Vietnam the industry can still be seen as being in the introduction stage in the product life cycle curve. Consequently, there will be a large public information gap about product attributes. As previously stated materials such as brick and clay currently dominate Vietnamese house building methods. In order to create adequate demand for wood pre-fabricated homes, effective marketing strategies must be implemented. Without effective targeted marketing, consumers in Vietnam would likely not embrace wooden pre-fabricated homes. A study done in Turkey investigating into poor pre-fabricated housing sales found that marketing was largely lacking, and consumers had a large misunderstanding about the pre-fabricated home concept (Adaydin, 2011). This pitfall of uninformed consumers must be avoided, and marketing strategies must be made to promote the benefits and image of pre-fabricated homes. Most importantly, pre-fabricated home builders must demonstrate that their products will provide the same benefits and value of traditional building methods (HUD, 2006).

The Vietnamese market can be seen as a unique one, in which the population is relatively young, with almost 60% of the population under 30 years old. This young market can be seen to be very image orientated, often associating foreign brands with quality (Bowman, 2011). An example of this obsession of image can be seen with the luxury goods rental industry, in which many young people rent luxury items such as Chanel dresses in order to perpetuate an image of wealth (Euromonitor International, 2013). This is likely a microcosm of Vietnamese society as a whole; as wealth increases people will inevitably want to show it off. The Canadian forest products industry could capitalize on this fact, and promote the high quality of Canadian made wood products to the consumers. The internet would be a prime way to promote such a product image. Over the years, internet usage in Vietnam has experienced rapid growth, with over 31 million internet users as of 2012 (Arno, 2012). Such a widely used communication medium would appeal to the relatively young market of Vietnam. However, any advertising campaign would be required to follow local advertising laws. Such laws include advertisements being required to be in Vietnamese, and having an absence of any misleading statements (Huyen, 2012). Therefore it would be necessary to perform more extensive research on local laws before any strategies are implemented.

In addition to marketing to the general public, it would likely be necessary to engage in trade missions between Canadian companies and potential customers such as developers. These trade missions can be a highly efficient way to promote the benefits that pre-fabricated housing systems have to the potential customers. An example of the efficacy of these trade missions can be seen in the context of the Chilean pre-fabricated housing market. The CMHC and Canadian Rockport homes conducted trade missions to Chile which eventually led to a plant being built in Santiago. In total, a staggering 90% of pre-fabricated home imports in Chile were built in Canada, likely a result of these ongoing trade missions (Lighthall, 2002). These trade missions also resulted in the use of wood in building construction to increase. Despite Chile typically building houses out of concrete or masonry, wood frame houses rapidly increased to account for up to 14% of the houses being built, doubling in usage in just over four years. This is remarkable considering that the Canadian style housing had a premium price over the Chilean style housing, a testament to the perception of the value of Canadian quality that had been created (Lighthall, 2002). As this example shows, even countries which traditionally don't use wood building systems can be swayed towards using wood building systems through effective marketing efforts.

Conclusions

Future Outlook

The future outlook can be seen as one with a significant opportunity; however it also contains some risk and uncertainty. It is hard to ignore the rapidly rising economy of Vietnam, and the rising income of its population. Vietnam is well poised to become a global economic power, and will inevitably have abundant investment opportunities on the horizon. Even with the housing slump, the future remains bright for the Vietnamese housing market. The housing market likely will recover; the question is when and to what extent. Much of the uncertainty related to development of a pre-fabricated housing market in Vietnam will relate to how the government will deal with the housing slump, and how long it will last. Many estimates assert that the housing slump has reached rock bottom, and only can go up from here. If it indeed does, the Vietnamese housing market would still remain a highly attractive investment opportunity for the Canadian pre-fabricated housing industry.

Recommendations

Canadian pre-fabricated home manufacturers should target both the affordable housing and vacation home markets in Vietnam. Clear market segmentation should be performed when marketing to these respective markets which both have drastically different characteristics. It may be advisable to initially play a waiting game to see how the current housing slump in Vietnam plays out in the coming years. It would be advisable to pursue mid-term to long-term entry rather than entry in the short term. At any rate, it would be hard to ignore the growth prospects of this country. Given the tremendous economic growth, there is a potential for a high rate of returns by being initial market trendsetters. The caveat comes in the risk of waiting too long, after which the market could become saturated with an excess of houses again.

In terms of housing systems, it seems that modular pre-fabricated systems would be best to suit the Vietnamese market. Given the right design, this system offers the flexibility of being able to be transported internationally through use of standard intermodal transportation systems. Manufactured pre-fabricated systems would be more constrained in terms of size limitations of international intermodal shipping. Panellized and pre-engineered systems would offer the greatest ease of shipping; however would come at the cost of added assembly complexity. Given the lack of skilled labour in Vietnam, this would present a significant challenge in assembling these housing systems. Canadian companies should also considering opening pre-fabricated housing factories in Vietnam; this would be especially attractive if a FIPA agreement between Canada and Vietnam is ratified.

In addition to choosing a suitable prefabrication system, consideration would also need to be given into modifying designs to meet local building codes and consumer preferences. There will likely be significant differences between Canadian and Vietnamese building codes and consumer preferences. It would be necessary to establish contacts with people familiar with local Vietnamese building codes and architectural styles. Expansion into a foreign market such as Vietnam would likely require significant investment in regards to R & D and marketing efforts. There will need to be a concerted effort to understand the local consumer housing preferences, and adjust the housing designs and marketing strategies accordingly. However, this is an investment which has potential for a significant sustained growth for many years to come. Vietnam is a blossoming market ready to burst on to the world economic stage. Combined with Canadian pre-fabricated building technology and expertise this could be a winning combination to success.

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