# The Competitive Strategy in Green Building for Indonesian Stakeholder's

Mombang Sihite and Moses Alfian Simanjuntak, *Members*, *IEDRC*

***Abstract*—The impact of global warming, cost efficiency, and limitations of fossil energies, influence man ideas trying to break through energy efficiency and alternative. One of that ideas is smart green building. Smart and green buildings deliver the financial and conservation benefits of energy management. There are three factors that support the development of smart green business in Jakarta (Indonesia), namely a stable macroeconomic conditions, government policies support, and the concept of strategic competitive. Macroeconomic factors should be stable, such as inflation, interest rates, and exchange rates. Thailand and Singapore are the examples of success in applying a concept of strategic competitive i.e. the generic strategic competitive strategy and the innovation value with conduct to Porter's five forces. The government support expectation is good bureaucratic system, their credibility incentives and certification standards as a guide for stakeholder's, market development funds, and good wishes of the government to conduct a tax reduction.**

***Index Terms*—Competitive strategy, value innovation, sustainable growth, smart green building.**

## I. Introduction

Currently, the progression in science and technology is very positive impact on human welfare. As a result of these advances, the movement of people, goods, and information is faster and cheaper over time. Besides of these advances, humans also feel the impact of global warming and fossil resources reduction caused by industrial progress. To overcome the adverse effects, man trying to break through energy efficiency and alternative.

In industrialized countries, the research and development of science and technology in the field of energy efficiency and alternative has a longstanding experience rapid growth. The one product, which is the result of research in science and technology, is smart green building.

Green building are about resource efficiency, lifecycle effect and building performance. Smart Building, whose core is integrated building technology systems, are about construction and operational efficiencies and enhanced management and occupant functions. Smart building means all operate of subsystem functional working by human less, minimize the error by human error, optimized the functional by intelligent system and confirmed all run without human error. Part of what a smart building will deliver is energy control and energy cost savings beyond that traditional system installation, due to the tighter control system integration. Smart and green buildings deliver the financial and conservation benefits of energy management.

Manuscript received December 18, 2014; revised February 6, 2015.

The authors are with Padjajaran University, Bandung city, Indonesia (e-mail: s.mombang.3a@id.azbil.com, mosesalfians@gmail.com).

Global warming, cost efficiency, and limitations of fossil energy are the current global issues. Indonesia stands to anticipate and to resolve the problems earlier. Therefore, that phenomenon is very well researched and its benefits should be felt by the whole nations. Our government should facilitate and provide a healthy business competition space and ensure the survival of smart green building efforts, especially in Jakarta. To promote smart green business, the Indonesian companies must be engaged and applying the concepts such as the generic strategic competitive strategy and the innovation value. To implement the concepts of that competitive strategies, the companies must conduct to Porter's five forces, as in Fig. 1.

## II. Literature Review

### A. Competitive Strategy

Competitive advantage is always judge relative to other competitors or the industries average, to obtain a competitive, a firm must either to create more value for customer (value innovations) while keeping its cost comparable to competitors, or it must provide value equivalent to competitors but at lower cost. A firm able to dominate competitors for prolonged periods of time has a sustained competitive advantages, Competitive advantage is reflected in superior firm performance (sustainable growth) always assess relative to a benchmark, either using competitors or the industry average and maintained over time, competitive advantage is sustainable by measuring profit, people and planet value [1].

To succeed in the marketplace, companies must embrace a competitive strategy. Michael Treacy and Fred Wiersma in their book, *The Discipline of Market Leaders* (1997) describe generic competitive strategies or value disciplines are operational excellence, customer intimacy and product leadership. The author's main premise is that companies must choose—and then achieve—market leadership in one of the three disciplines, and perform to an acceptable level in the other two. Operational excellence as a competitive strategy, an operational excellence strategy aims to accomplish cost leadership.

The strategy lends itself to high-volume, transaction-oriented and standardized production that have little need for much differentiation. A strategy of operational excellence is ideal for markets where customers value cost over choice, which is often the case for mature, commoditized markets where cost leadership provides a vehicle for continued growth, as in Fig. 1.

Leaders in the area of operational excellence are strongly centralized, with strong organizational discipline and a standardized, rule-based operation. Measuring the

DOI: 10.7763/IJIMT.2015.V6.565

performance of key processes and benchmarking costs comprise an integral part of the operations of these companies who relentlessly seek to streamline their processes in order to eradicate errors. Disciplines such as TQM, SCM and Six Sigma are cultivated in a volume-oriented business model. Examples of companies pursuing this competitive strategy include Wal-Mart, IKEA, Southwest Airlines, McDonald's and FedEx.

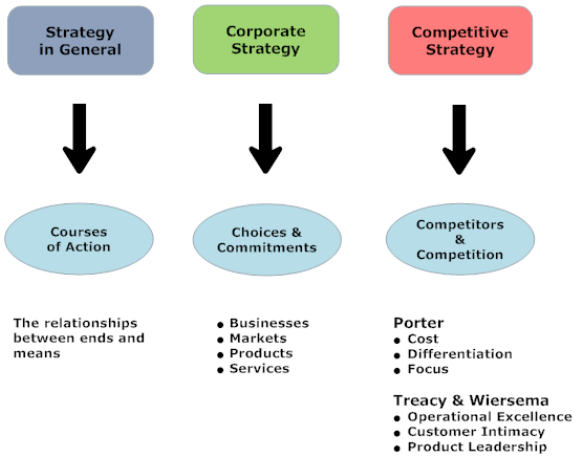


Fig. 1. General strategy.

Customer intimacy as a competitive strategy, the customer intimacy strategy focuses on offering a unique range of customer services that allows for the personalization of service and the customization of products to meet differing customer needs [2]. Often companies who pursue this strategy bundle services and products into a "solution" designed specifically for the individual customer. The successful design of solutions requires vendors to possess deep customer knowledge as well as insights into their customers' business processes. The solutions offered rarely present the cheapest option for the customer, nor the most innovative, but are regarded as "good enough." Customer intimacy focuses on the needs of the individual customer, true customer intimacy can only arrive through aligning the product development, manufacturing, administrative functions and executive focus around the needs of the individual customer. Customer-centric companies tend to have a decentralized organization which allows them to learn and change quickly according to customers' needs. These types of companies often keep an entire ecosystem of partners for the actual production and delivery of products and services to their customers. Examples of companies who pursue this type of strategy include IBM, Lexus, Virgin Atlantic and Amazon.com.

Product leadership as a competitive strategy aims to build a culture that continuously brings superior products to market. Here product leaders achieve premium market prices thanks to the experience they create for their customers. The corporate disciplines they cultivate include: research portfolio management, teamwork, product management, marketing, talent management. Product leaders recognize that excellence in creativity, problem solving and teamwork is critical to their success, this reliance on expensive talent means that product leaders seek to leverage their expertise across geographical and organizational boundaries by mastering such disciplines as collaboration and knowledge management. The consumer electronics, fund management, automotive and pharmaceutical industries include many companies pursuing a strategy of product leadership. Examples of these include Apple, Fidelity Investments, BMW and Pfizer.

### *B. Generic Strategy*

Michael Porter's "Generic Strategies" in Fig. 2, Porter's five forces model describes strategy as taking actions that create defendable positions in an industry. In general, the strategy can be offensive or defensive with respect to competitive forces.

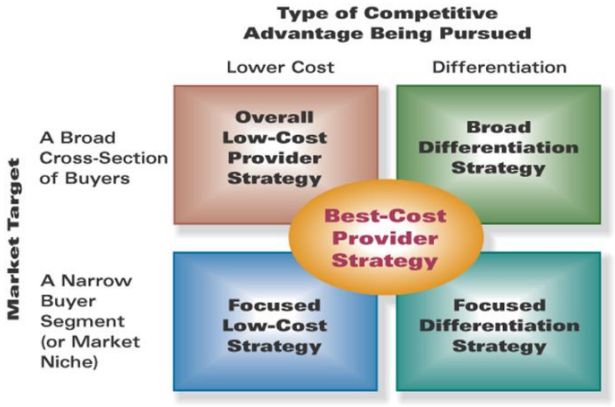


Fig. 2. Generic strategy.

Defensive strategies take the structure of the industry as given, and position the company to match its strengths and weaknesses to it. In contrast, offensive strategies are designed to do more than simply cope with each of the competitive forces; they are meant to alter the underlying cause of such forces, thereby altering the competitive environment itself. There are, of course, many specific strategies of each type (offensive or defensive), and identifying which is best depends on the circumstances. But Porter suggests 3 broad or generic strategies for creating a defendable position in the long-run and outperforming competitors [3].

#### *1) Cost leadership*

Cost leadership means having the lowest per-unit (i.e., average) cost in the industry – that is, lowest cost relative to your rivals. This could mean having the lowest per-unit cost among rivals in highly competitive industries, in which case returns or profits will be low but, none the less higher than competitors or, this could mean having lowest cost among a few rivals where each firm enjoys pricing power and high profits. Notice that cost leadership is define and independently of market structure. Cost leadership is a defendable strategy because:

1) It defends the firm against powerful buyers. Buyers can drive price down only to the level of the next most efficient producer.
2) It defends against powerful suppliers. Cost leadership provides flexibility to absorb an increase in input costs, whereas competitors may not have this flexibility.
3) The factors that lead to cost leadership also provide entry barriers in many instances. Economies of scale require potential rivals to enter the industry with substantial capacity to produce, and this means the cost of entry may be prohibitive to many potential

competitors.

Achieving a low cost position usually requires the following resources and skills:

1) Large up-front capital investment in new technology, which hopefully leads to large market share in the long-run, but may lead to losses in the short-run.
2) Continued capital investment to maintain cost advantage through economies of scale and market share.
3) Process innovation – developing cheaper ways to produce existing products.
4) Intensive monitoring of labor, where workers frequently have an incentive-based pay structure (i.e., a contract which includes some combination of a fixed-wage plus piece-rate pay).
5) Tight control of overhead.

*2) Differentiation*

Differentiating the product offering of a firm means creating something that is perceived industry wide as being unique. It is a means of creating your own market to some extent. There are several approaches to differentiation, such as: different design, brand image, number of features, and new technology. A differentiation strategy may mean differentiating along 2 or more of these dimensions. Differentiation is a defendable strategy for earning above average returns because:

1) It insulates a firm from competitive rivalry by creating brand loyalty; it lowers the price elasticity of demand by making customers less sensitive to price changes in your products.
2) Uniqueness, almost by definition, creates barriers and reduces substitutes. This leads to higher margins, which reduces the need for a low-cost advantage.
3) Higher margins give the firm room to deal with powerful suppliers.
4) Differentiation also mitigates buyer power since buyers now have fewer alternatives.

Achieving a successful strategy of differentiation usually requires the following:

1) Exclusivity, which unfortunately also precludes market share and low cost advantage.
2) Strong marketing skills.
3) Product innovation as opposed to process innovation.
4) Applied R&D.
5) Customer support.
6) Less emphasis on incentive based pay structure.

*3) Focus or niche strategy*

Here we focus on a particular buyer group, product segment, or geographical market. Whereas low cost and differentiation are aimed at achieving their objectives industry wide, the focus or niche strategy is built on serving a particular target (customer, product, or location) very well.

Note, however, that a focus strategy means achieving either a low cost advantage or differentiation in a narrow part of the market. For reasons discussed above, this creates a defendable position within that part of the market. Stuck in the Middle: Failure to develop a strategy in one of these 3 directions is a firm that is "stuck in the middle." This means you lack the market share, capital, and overhead control to be a cost leader, and lack the industry wide differentiation necessary to create margins which obviate the need for a low-cost position. Being "stuck" implies low profits as a rule: profits are bid away to compete with low cost producers; or, the firm loses high margin business to firms who achieve better differentiation. Classic examples of this problem are large, international airline companies, many of which are now bankrupt. Depending on a firm's capabilities and resources, a "stuck" firm must gravitate toward either low cost (usually by buying market share) or focus or differentiation (which may mean decreasing market share).

Each generic strategy is based on erecting different kinds of defenses against the competitive forces, and hence they involve different risks.

1) Cost Leadership, maintaining cost leadership can be risky because:
   - Innovations nullify past inventions and learning, and hence cost leadership requires continual capital investment to maintain cost advantage.
   - Exclusive attention to cost can blind firms to changes in product requirements.
   - Cost increases narrow price differentials and reduce ability to compete with competitors' brand loyalty.
2) Differentiation, the risks are:
   - Cost differentiation between low cost firms and differentiating firms becomes too large to hold customer loyalty. Buyer trade-off features, service, or image for price.
   - Buyers need for differentiation falls.
   - Imitation decreases perceived differentiation

*C. Value Innovation*

The concept of value innovations which referring to the improvement of product (goods and service), processes, sales, marketing, and organizational method in working, external business and relationship [3], with sources in Fig. 3.

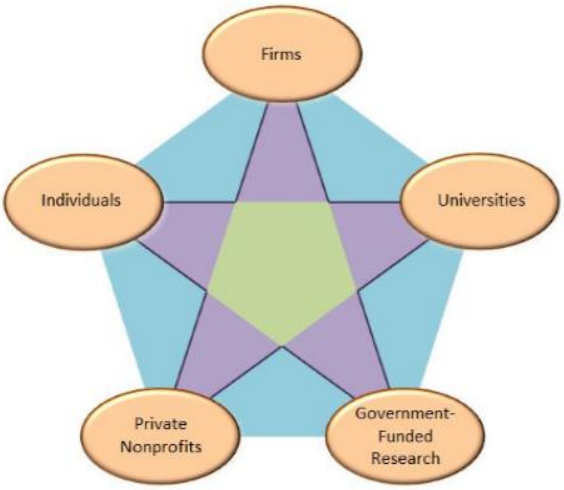


Fig. 3. Source of innovation as a system.

Innovation is that performed company to include Market (Client is focus company to do to innovate), Technology (Company perform research and development and expansion to get patent). Entrepreneurship (Company as aggressive pioneer perform project be risky). To reach the growth with limited the source, then company innovation shall focus to market orientation. The Executive Innovation Governance Group is a organization which with responsibility to about the development, expansion of

innovation in a company. This organization consisted of 1) Functional that with responsibility to create core business process, 2) Institute of research that developing new product, 3) Product marketing which keep up the existence of product of newest generation in the market, 4) Community and education that supporting consumer with idea that new. The promotion of innovation for sustainable growth requires a holistic approach and a long-term perspective across the policy cycle.

National and regional policy-makers are encouraged to lead the development of an ambitious long-term vision of smart and sustainable growth under the research and value innovation strategies for smart specialization. Focus on transformative value innovation requires the engagement of key stakeholders in all phases from policy design to monitoring and evaluation [4]. Regional and local perspectives have become more important than ever in fostering sustainable growth. Firstly, regions hold the knowledge about the local innovation systems and have the capacity to mobilize economic actors towards a shared goal. Secondly, they are well positioned to develop a thorough understanding of local natural assets and environmental challenges. There is no 'one-size-fits-all' recipe for the development and implementation of strategies that connect sustainable and smart growth: each region needs to seize its own opportunity within the support for investments that are provided by the regional policy. They should assess the regional innovation potential and consider investing in the areas of eco-innovation, ecosystem services and sustainable energy, taking into account their specific strengths and weaknesses. Many of the sustainability challenges are beyond the scope of local, regional or national action.

Three important issues when doing any sort of organizational assessment of value innovation: 1) confidentially is vital, 2) share the result, 3) if issues arise from surveys, have a commitment to respond to them [5]. To promote value innovation? First, must identify and articulate the company's prevailing strategic logic. Company's strategic focus and the approach to customer assets and capabilities and product and service offerings that are taken as given. Value innovation is simultaneous pursuit of radically superior value for buyers and lower cost for companies. Revenue, profitability, market share and customer satisfaction are all measures of a company's current position. The logic of value innovation starts with an ambition to dominate the market by offering a tremendous leap in value. Value innovators do not focused on competing, they can distinguish the factors that deliver superior value from all the factors the industry competes on. Value innovators build on the powerful commonalities in the features that customers value.

The five dimension of strategy value innovation logic: 1) Industry Assumptions, Industry's condition can be shaped, 2) Strategy focus, competition is not the benchmark. A company should pursue a quantum leap in value to dominate the market, 3) Customers, a value innovator targets the mass of buyers and willingly lets some existing customers go. It focuses on the key commonalities in what customers value, 4) Assets and capabilities, a company must not be constrained by what it already has. It must ask, what would we do if we were starting anew? 5) Product and service offerings, a value innovator thinks in terms of the total solution customers seek, even if that takes the company beyond its industry's traditional offerings. For managers of diversified corporations, the logic of value innovation can be used to identify the most promising possibilities for growth across a portfolio business, not necessarily in developing new technologies but in pushing the value they offer customers to new frontiers.

Value innovation is quite different from building layers of competitive advantage and is not about striving to outperform the competition. Nor is value innovation about segmenting the market and accommodating customer individual needs and differences. Value innovation makes the competition irrelevant by offering fundamentally new and superior buyer value in existing markets and by enabling a quantum leap in buyer value to creation an incremental scale new markets. Value without innovation tend to focus on improving the buyer's net benefit or value creation on an incremental scale. Innovation without value can be too strategic or wild or too technology driven or futuristic. Value innovation anchors innovation with buyer value, value innovation is not the same value creation. Value innovation can occur with or without new technology. Value innovation as a strategy is the essence of strategy in the knowledge economy, after a value innovation is created business line extension and continuous improvements can maximize profit before another value innovation is launched. Value innovation as strategy creates a pattern of punctuated equilibrium in which bursts of value innovation that reshape the industrial landscape are interspersed with periods of improvements geographic and product line extensions and consolidation. As value innovation further penetrates in to markets, strategies of cost leadership and differentiation are likely to succeed best at the low end (cost leaders) and the high end (differentiators).

### *D. Sustainable Growth*

Probably firms, therefore, rely entirely on internally generated funds as well as debt to financing growth. The maximum annual sales growth that a firm can support using these two sources of financing is its sustainable growth rate. Sales growth beyond this point is not necessarily a blessing. In fact, when sales increase faster than the sustainable growth rate, severe financial problems can result. At the extreme, firms can literally "grow broke". Obviously, then, the sustainable growth rate is an important consideration in the setting of marketing objectives and the development of marketing strategy (Perrings C., 2000:19-54). Sustainable growth is a tool, then, for assessing how rapidly a firm's sales can increase while it finances required new assets entirely through additions to retained earnings (net income) and new debt. For purposes of simplicity, the sustainable growth model discussed here assumes that cash flow is equal to net income. This steady-state situation, discussed by (Higgins, 1977), assumes that cash flow due to depreciation is reinvested in new assets to maintain the existing level of sales. As Higgins notes, this simplified assumption can be easily relaxed and the sustainable growth formula adjusted accordingly. It should also be noted that the sustainable growth model is a financial management tool that has gained popularity for purposes of strategic marketing analysis (Kerin, Mahajan and

Varadarajan, 1990).

Many businesses, both small and large, have fallen into the trap of unbridled growth. We tend to think, "Bigger is better", but is too much a bad thing? But is too much growth a bad thing? How do we know when to stop growing? The answer is lie in understanding the concept of sustainable growth. It takes money to grow a business. As business increases, so does the need for additional assets to support the growth in business. If growth exceeded to support the growth the financial resources necessary to fund the increase in assets, cash flow may be impeded, resulting in unsustainable growth, and in some cases eventually bankruptcy. Simply stated, the rate of sustainable growth determines how much a business can grow without compromising its cash flow or having to borrow funds.

The Sustainable Growth Rate-SGR of any company is determined by the following four factors: 1) Profit margin, an increase in the profit margin increase the firm's ability to generate funds internally and thereby increase its sustainable growth. 2) Net assets turnover, an increase in the firm's net asset turnover increase the sales generate for each rand in assets; this decrease the firm's need for assets as sales grow thereby increase the SGR. 3) Financial policy, an increase in the Debt / Equity ratio increase the firm's financial leverage; and this make additional debt financing available. 4) Dividend policy, a decrease in the percentage of net profit after tax paid out as dividend increase the retention ratio, in turn increasing internally generated equity and thus increasing sustainable growth.

Even a small scale success will make it easier to continue the process until you reach the goal of continuous innovation for sustainable growth, with an expanded vision of innovation and a commitment to making holistic, multilevel innovation: 1) Transformational innovation is the granddaddy of innovation a disruptive breakthrough that changes society and impacts the way people live. 2) Category innovation more evolutionary than revolutionary, category innovation originates at the industry level and builds on proven transformational innovations such as the internet. 3) Marketplace innovation, the singular of marketplace innovation is to bring new life to existing product through innovation. 4) Operational innovations, operational innovation is the only innovation level that is more internally than externally focused. 5) Cascading although we've focused on each level of innovation individually up to this point, the four level are particularly powerful in the way that they interact. Innovation exist on four levels, but it also flows from one level to the next, something like a waterfall), a part of sustainable growth, it is possible [6]. The sustainable growth approach is a screening tool for identifying industries that might compete in high growth export markets but which do not, for one reason or another, have the financial resources to capitalize fully on opportunities in these markets. Industries identified as priority candidates for export development assistance should then be the subject of rigorous in-depth analysis to determine which industries will benefit the economy most in terms of expanded export sales.

The Sustainable Growth concept is applied in the Indonesia context. Sustainable Growth is one of three priority areas in the Asia 2020 strategy. It has a clearly defined focus on the promotion of the competitiveness of the Indonesia economy, including capitalization on its leadership in green technologies, promoting smart grids, improving the business environment, especially for SMEs, and influencing consumer choice. Sustainable Growth is also about attaining environmental objectives such as decreasing the carbon intensity of the economy, promoting the efficient and sustainable use of resources, protecting the environment, reducing emissions and preventing loss of bio-diversity. Sustainable growth the creation of shareholder and societal values while reducing environment impacts along entire value chain is not a choice but a requirement for successful business, a sustainable future for all of us. Innovation and technology are critical ingredients to moving business increasingly away from the use of fossil fuels [7]. Sustainable development has a relationship of three broad goals, such as: environmental stewardship, social responsibility and economic prosperity.

## III. The Comparison Research

In this research, the case studies raised in Thailand and Singapore then reflecting it to Jakarta (Indonesia) condition. Both countries had been selected due to the same tropical climate of ASEAN and the business has been successfully applied.

### *A. Thailand Setting the Standard in Green Building Incentives*

Thailand's green building and energy efficiency construction sector, which may need BT400bn ($13bn) in spending over the next two decades, is looking toward better certification standards and government incentives to drive growth. Figures released by the Department of Alternative Energy Development and Efficiency (DEDE) show that BT216bn ($7bn) was spent on energy efficiency between 2003 and 2011, highlighting the growing awareness of sustainability and conservation within Thailand in recent years. But for green construction practices to take hold in Thailand, they will depend upon the credibility of competing certification standards drawn up by business coalitions, governments and financiers.

Green development rests on three separate but related standards: certification systems, national building codes and eligibility criteria for incentives. Current standards and financing schemes – notably the Thai Ministry of Energy's (MOE) revolving loan program – should continue to support energy efficiency in the construction sector. But deeper market penetration, especially for advanced green building solutions promising more than moderate energy efficiency gains, will rest on the stringency of new certifiers and continued financial support from the Thai government. Thai certification: By auditing and rating buildings' energy efficiency and environmental friendliness, certification systems provide a common point of reference for investors, developers and end-users to value green buildings [8].

### *B. Singapore Guide to Government Funding and Incentives for the Environment*

Singapore is well-known as a clean and green city with

the government striving for environmental sustainability while growing the economy. The government has also identified Environmental and Water Technologies (EWT) including Clean Energy as strategic areas where Singapore has a competitive edge and which could generate future economic growth. To accelerate the growth of the environmental industry and to maintain Singapore's image as a clean and green city, the government has initiated several funding and incentive schemes related to energy efficiency, clean energy, green buildings, water and environmental technologies, green transport, waste minimization, environmental management system, environmental initiatives and clean development mechanism.

The funding and incentive schemes are provided by government agencies such as: Building and Construction Authority (BCA), Economic Development Board (EDB), Land Transport Authority (LTA), National Environment Agency (NEA), National Parks Board (NParks), PUB, the national water agency (PUB), SPRING Singapore (SPRING), Urban Redevelopment Authority (URA) Here's our guide to the various government funding and incentives for the environment, which could help us move towards a Low Carbon Singapore: Energy Efficiency Improvement Assistance Scheme (EASe), Grant for Energy Efficient Technologies (GREET), Accelerated Depreciation Tax Allowance, Design for Efficiency Scheme (DfE), SCEM Training Grant, Clean Energy Research and Test bedding Program (CERT), Clean Energy Research Program (CERP), Solar Capability Scheme (SCS), Market Development Fund, Green Mark Incentive Scheme for Existing Buildings (GMIS-EB), Green Mark Incentive Scheme for New Buildings (GMIS-NB), Green Mark Gross Floor Area Incentive Scheme (GM-GFA), MND Research Fund for the Built Environment, Pilot Incentive Scheme for Green Roofs, Gross Floor Area Incentives for Outdoor Refreshment Area on Rooftops, Water Efficiency Fund (WEF), Fast-Track Environmental and Water Technologies Incubator Scheme (Fast-Tech), Technology Pioneer (Tech Pioneer) Scheme, Incentive for Research and Innovation Scheme (IRIS), Environmental Technology Capability Development Program (Enviro Tech CDP), Innovation Voucher Scheme, Innovation for Environmental Sustainability (IES) Fund, Land Transport Innovation Fund (LTIF), Green Vehicle Rebate (GVR), 3R (Reduce, Reuse, Recycle) Fund, Local Enterprise Technical Assistance Scheme (LETAS), 3P Partnership Fund, Clean Development Mechanism Documentation Grant, see more at [9], [10].

### *C. Indonesia no Guide to Government Funding and Incentives for the Environment*

Indonesia just started in implementing green building criteria in its infrastructure development. Till today the green rating tool was introduced by the Green Building Council of Indonesia (GBCI) in 2010, while the first government regulation on green building was introduced in 2012. Green Mark Singapore and LEED also able to implement green building certification in Indonesia.

Since Indonesia is very late in developing green criteria, Indonesia needs a shortcut in finding direction for the development. Lesson learned from developed country in implementing their green criteria could be used by Indonesia as a basis or reference in developing appropriate green building criteria. This paper presents a comparative study of green building criteria in developing countries, green building criteria in GBCI green-ship rating, and also green building criteria of Jakarta government regulation. The comparison is done by mapping any criteria listed in those documents. This study will also map the changes process of the criteria development in order to find the direction of the development of each criterion or each rating tools. In this study, the background or formulation contexts of each green criterion need to be carried out.

Especially the environmental context is required to be analyzed in order to find the differences between green criteria. This study will focus on sustainability aspects so the comparative study can produce precise direction for the development of green building criteria with appropriate context towards Indonesia's sustainable Infrastructure development currently there are two government regulations and one rating tool that applies in Indonesia related to green building criteria. The first is Ministry of Environmental Decree Number 08/Year 2010 on Criteria and Certification of Eco-friendly Building launched in 2010, the second is Jakarta's Government Regulation (Jakarta's Decree) Number 38/ Year 2012 on Green Building. The Ministry of Environmental Decree actually more focused on certification and accreditation efforts that will require for the Eco-friendly Buildings assessment. However, there also mention about certain criteria of Eco-friendly Building.

Jakarta's Decree is a mandatory regulation that must be followed by all buildings located in Jakarta which meet certain requirement. This regulation shall apply not only to new buildings but also for buildings under construction and existing buildings. The only one rating tool in Indonesia is Green-ship Rating Tools, developed by Green Building Council Indonesia (GBCI), which was founded in 2009 by several parties that interested in green building issue (professional, government, industry, education, associations and societies). The first Green-ship was launched in June of 2010.

Currently available are 4 rating tools for new building, existing building, interiors and home. Rating tools for new buildings even been revised for the third times. It has been over 3 years since it was first, the Green-ship certify has certified 3 new buildings and 3 and several buildings that are still in the process of registration and assessment. While Malaysia rating tool, GBI (Green Building Index) in the fourth year now, until July 2013 has certified more than 60 million square feet, or more than a hundred buildings. While Singapore rating tools, Green-mark, currently has certified more than 1,500 buildings in eight years. This paper will discuss criteria of green buildings that listed in Green Mark, GBI, Green-ship, Jakarta's Decree. Those fourth green building criteria have similarity in climate context. However Green-mark will be positioned as benchmark since it is the most leading and established among them.

Discussion will done by exploring the background of each green building criteria, and then make a detailed comparison of the criteria and weighting as well as its development. Comparison is limited only on Non-Residential New Construction related to the research that is

being conducted. Result of the discussion will be a recommendation for further development of green building criteria in Indonesia both for regulatory and rating tools.

Jakarta's Decree on green building is the first of local government regulation of green building in Indonesia. This regulation is mandatory and applies to all existing buildings or new buildings that meet certain minimum area requirement in the region of Jakarta. To develop green building criteria, Jakarta provincial government supported by the IFC (International Finance Corporation) in updating information building development in Jakarta and simulation of building performance. They also discuss with various parties involved in green building issues to obtain input for the regulation to be feasibly implemented. According to the Central Statistics Agency of Jakarta, based on Gross Domestic Product, economic growth of Jakarta in year of 2012 reached 6.5%. The highest growth was achieved by the transport and communications sector (11.8 %), followed by the construction sector (6.9 %), and trade, hotels and restaurants (7.2 %). Yet, the rapid development still leaves many problems to be solved. One of them is the infrastructure, which include limited supply of clean water, electricity, and lack of drainage system. Limited clean water supply by government caused increasingly amount of deep well exploitations. Limitations of drainage system caused flood during the rainy season. The building is required to have a retaining tank / pounds to collect storm water and flush it when the rain had passed. Limitation of sewer system requires every building to process waste by their self.

Another problem is public transportation, although it is available but only a small portion that meets the security and comfort as well as integrated with other modes of transportation. It cause more people choose to use their own vehicles, both cars and motor cycles. Then it creates traffic jam all over the city at certain time. The Jakarta's government effort to initiate the Green Building Regulations needs to be appreciated. This regulation was made to complete the state existing regulations and tailored to the unique requirement of Jakarta, see more at [11]-[13].

## IV. Conclusion

As a practitioner that has worked with experiences around 25 years in the smart building technology in Indonesia, see existence of phenomenon in the movement of application green building in Indonesia still very slow compare to the closest states like Singapore and Thailand. In a concept green building, there are three philosophies such as reduce, reuse and recycle. The application of reduce energy is saving automatic, measureable and centralization. In growth application of green building to become a phenomenon, that will be studied due to marketing provider didn't deliver a concept green building to side developer, or because the high cost factor, or because the factor is not supported by government in provide incentive to application green building, or because un-believing to provider like bad reputation of after sales service.

Singapore and Thailand governments have implemented incentive credibility standards and certification which is a general guide for investors, developers and end users to generate green life construction. Energy efficiency, clean energy, green building are Singapore government planning to create a clean and green city that eventually can support economic growth. Implementation of these policies can be seen in energy efficiency improvement assistance, grants for energy-efficient technologies, clean energy research program, market development funds, and green incentive schemes and new buildings.

Previous Indonesian governments, directs the economy of the spending (Demand Side, Keynesian Theory) for the short term. However, Indonesia's economic policy direction under President Jokowi is fully supportive of the factors of production (Supply Side, Classical Theory) for the long term. This can be seen from the presentation of the President Jokowi in APEC (China, Beijing) in 2014. The majority of investment funds from domestic direct investment (DDI) and foreign direct investment (FDI) will be disbursed to the infrastructures. Macroeconomics conditions in Jakarta is the lowest inflation rates in Indonesia, economic growth above the national economic growth (5.2% - 5.6%) and the bureaucratic system that has been enhanced to support the investment climate in smart green building in Jakarta. Besides, the government also must be able to realize the credibility of incentives and certification standards as a guide for stakeholders, market development funds, and good wishes of the government to conduct a tax reduction.

Indonesia is a country adherents of perfect capital mobility system and small open economics country, so that the negative impact of the global economic downturn affects to Indonesian economy condition. US economic conditions improved and rumors about the FED interest rate hike, but the other side, the economic decline of Europe, China, and Japan is a negative impact on the investment climate in Indonesia such as the weakening of the rupiah value. If the impairment of rupiah in excess of 10%, there will be FDI large scale capital flight because Indonesia is considered a country that is a big risk in investing. The weakening of the rupiah will have an impact on other macroeconomic factors, such as rising inflation and interest rates (Robert Mundell, Milton Friedman, and real interest rate parity).

We hope that global economic conditions improved and our government can emulate Thailand and Singapore government policies to support the continuation of smart green business. To achieve this requires, it takes a strong desire and of course should be separated from political interests such as certain groups and the mafia.

## References

[1] L. C. Rodrigues, E. A. Maccari, and F. C. Lenzi, "Innovation strategy for business to business market penetration," *International Business Research*, vol. 5, no. 2, Feb. 2012.

[2] R. Ian, "Innovation and creativity in organizations: A review of the implications for training and development," *Report Information from ProQuest*, Sep. 2014.

[3] A. Bausch, M. Hunoldt, and L. Matysiak, "Superior performance through value-based management," *Handbook Utility Management*, Berlin Heidelberg: Springer-Verlag, 2009.

[4] A. Doranova, E. Griniece, M. Miedzinski, and A. Reid, "Connecting smart and sustainable growth through smart specialization," *A Practical Guide for ERDP Managing Authorities*, 2013.

[5] A. Lynda, N. Goodrich, R. David, and S. James, "Assessing your organization's potential for value innovation," *Research Technology Management*, 2005.
[6] K. Bilal and J. Stevenson, "Breaking away: an innovation model for sustainable growth," *Research Technology Management*, 2011.
[7] P. V. Tebo. (2005). Building business value through sustainable growth. *Research Technology Management*. [Online]. Available: http://www.lowcarbonsg.com/2009/05/10/singapore-guide-to-government-funding-and-incentives-for-the-environment/#sthash.LeQwwdrn.dpuf.
[8] Thailand: Setting the standard in green building incentives, Oxford Business Group, Nov. 19, 2012.
[9] Buildings, Version NRB.4.1. Building Construction authority, 15 Jan. 2013 BCA green mark projects. [Online]. Available: http://www.bca.gov.sg/greenmark/green_mark_projects.html
[10] Singapore Building Control (Environmental Sustainability) Regulations. (2008). [Online]. Available: http://www.bca.gov.sg/BuildingControlAct/others/building_control_env_sus_regulations.pdf (last date accessed, 17 October 2013).
[11] The Central Bureau of Statistics, DKI Jakarta, No. 12/02/31/Th. XV, February 5, 2013 on Jakarta Economic Growth Fourth Quarter of 2012.
[12] National Center for Sustainability Reporting, *Report of the Judges - Indonesia Sustainability Reporting Award*, Jakarta: National Center for Sustainability Reporting, 2011.
[13] DKI Jakarta Governor Regulation No. 38 Year 2012 on Green Building, April 11, 2012.

**Mombang Sihite** is an Indonesian and a member of IEDRC. Pak Mombang has a bachelor degree in electrical engineering, University of Jayabaya, Indonesia and the master in management, University of Pancasila, Indonesia. Currently, he is also a doctoral student in doctoral program in business management in Padjajaran University (Indonesia). He is a president director of PT. Azbil Berca Indonesia. Pak Mombang has been pursuing research in the areas of electrical engineering and strategic management.

**Moses Alfian Simanjuntak** is an Indonesian and a member of IEDRC. Pak Moses has a bachelor degree in mathematics/statistics, Bandung Institute of Technology (ITB), Indonesia and a master degree in statistics, Bogor Institute of Agriculture (IPB), Indonesia. Currently, he is also a doctoral student in doctoral program in banking and finance in Padjajaran University (Indonesia). He is a consultant in finance, market research (statistics) and strategic management. He was a lecturer in Malaysia and also in Jakarta (Indonesia). Pak Moses has been pursuing research in the areas of finance, market research (statistics) and strategic management.