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Enterprise Information Technology Strategic Plan (EITSP) delivers Indonesian Bank Performance

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ABSTRACT

Most of banking financial products and services use information and communication technology (ICT) (nowadays called digital technology (DT)) in the production and delivery process to enable them in effective (doing right things) and efficient (doing things right) way to stay competitive, while there is a challenge in managing the enterprise wide ICT organization where ICT organizations often struggle with managing the balance between the supply and demand side of ICT products and services together with aligning between business and ICT demands. This research uses mixed method both qualitative (questionnaires survey to the top 20 biggest asset banks whose assets contribute 72.5 % to total Indonesian banking industry assets), and quantitative secondary data available in the market methodology to investigate, assess and understand that enterprise information technology (IT) strategic plan (EITSP) as regulated by bank Indonesia and / or Otoritas Jasa Keuangan (OJK) (Indonesia Monetary / financial services Authority) improves indonesian bank performance (BP) (better return on asset (RoA)) by delivering innovative products and quality services to delight the customer experience in today dynamic digital business world and management. And whether the quality processes of the EITSP establishment, the banks leaders' competence (LC), the banks leaders' execution contribution (LEC) and the banks annual IT strategic investment spending (ITIS) delivers Indonesian banks performance in the dynamic business challenges.

Key words: Enterprise Information Technology Strategic Plan (EITSP), Indonesia Bank Performance (BP), return on asset (RoA), Leaders' Competence and Execution Contribution (LC & LEC), annual Information Technology strategic Investment Spending (ITIS), Indonesian banking industry.

1. INTRODUCTION (RESEARCH BACKGROUND)

Today, most of banking and financial products and services use information and communication technology (ICT) (nowadays called Digital Technology (DT)) (Beccalli, Does IT Investment improve bank performance? Evidence from Europe, 2005) in the production and delivery processes to enable them in effective and efficient way to stay competitive and surpass the customers' satisfaction and experience. But there is very little / no interest in research in information technology (IT) investment and its impact to the bank (firm) performance especially in the Indonesian banking industry, while IT investments in the banking industry is an intrinsic nature of banking activities to process, to manage, and strategically use information to develop new and more sophisticated financial products and services.

Nowadays digital technology (DT, another term used replacing ICT) also shapes the ways in which banks carry out their business, with the application of new and improved technologies expected not only to reduce bank costs but also to grow bank revenues over time innovatively.

Recently, there is a PwC's Indonesia Banking Survey 2017 Report about the Indonesian banking business opportunities, stated that Indonesia bankers clearly feel they are in the most attractive market in Southeast Asia, not only margins are excellence (31% response), but also population size (27%), low banking penetration (21%), economic growth (17%) and attractive loan growth (4%) to make a profitable banking.

Still in the PwC 2017 report (PWC, 2017), it stated that the banking industry in Indonesia is undergoing a significant transformation driven by digital technology / information technology.

Technology is seen by many in the industry as a way to level the playing field by providing new channels to access customers while driving down the cost of customer acquisition and servicing and in the same time drive the products & services innovation / creativeness digitally.

But in the report, it mentioned that only 33% of the Indonesian banks were very clear with their digital strategies.

While, as mentioned by Michael E. Porter in the strategic management journal, vol. 12, 95-117 (1991): The reasons

why firms succeed or fail is perhaps the central question in strategy. The causes of firm success or failure is inextricable bound up in questions such as why firms differ, how they behave, how they chose strategies, and how they are managed.

And there is also bank indonesia's regulation (Peraturan Bank Indonesia (PBI) No. 9/15/PBI/2007 about risk management implementation in the use of information technology by banks and PBI No. 12/21/PBI/2010 about bank's business plan) to ask all banks to fulfill and submit annually in a timely manner to Bank Indonesia for bank's business plan and the risk management implementation in the use of IT by banks and its responsibility by the BoD and all parties (business units and supporting units) of the bank's organization who use information technology.

Only after having a clear digital business strategic plan, can a successful Enterprise IT Strategic Plan be determined, established and implemented. Given the speed at which digital technology is advancing due to the falling cost of advanced technology driving the digital revolution, and the take-up of that unleashes combinatorial technology by customers in Indonesia, having anything less than a very clear digital strategy may be a risky proposition in the long-term.

Are Indonesian Banks' & their organization ready For Digital Banking Transformation Journey? Preparedness – a glass half-full or half-empty?

Given the level of investment in technology transformation and the impact of technology on the industry, smaller BUKU 2 and BUKU 1 banks were more pesimistic, with only 11% feeling the industry was unprepared. Larger banks were more likely to feel very prepared (57%) for BUKU 4 banks, and 32% for BUKU 3 banks, indicating that smaller banks may be more vulnerable to risk. It will also be critical for banks to have robust stress testing and contingency planning to be ready to respond to quickly changing market conditions. (Source: PwC Indonesian Banking Survey 2017 Report)

In the global scale, (World Economic Forum in collaboration with Accenture, 2016) as stated by Bruce Weinelt – Head of Digital Transformation – in World Economic Forum 2016 white paper (about Digital Transformation Industries – Digital Enterprise – January 2016 in collaboration with Accenture, it stated that it is clear that digital technology will transform most industries, there are a number of challenges that need to be understood. These include factors such as the pace of changing customer expectations, cultural transformation, outdated regulation, and identifying and accessing the right skills – to name just a few. These challenges need to be addressed by industry and government leaders to unlock the substantial benefits digital offers society and industry.

Leaders across all industries are writing the next chapter of the digital economy. It is time to either become part of the story or just another footnote in the history of disruption.

1.2 GAP, CONTROVERSY, AND INCONSISTENCY (CGI) RESEARCH ANALYSIS

After researching more than 350+ previous journal, and narrowed down to 76 journals, I found that there are gaps, controversies and inconsistencies amongst those previous researches as explained below.

1.2.1 GAP ANALYSIS

There is a little or no further study about the link between IT Strategic Investment with Indonesian Banks' Performance, even in the PWC Indonesian Banking Survey 2017 report above, it does not contain further detail study showing both the process and the statistics number which link IT Strategic (Investment) Planning with successful Indonesian Banks' Performance.

Refer to international journal, there is also a little or no such research to link the IT Investment with The Bank's Performance (Beccalli, Does IT Investment improve bank performance? Evidence from Europe, 2005).

In her paper, she showed evidence that the substantial investment in IT (except the IT Services) by banks does not lead to improved profits performance can be explained by various factors and she suggest deserving of future research.

There may be a gap between business and IT alignment processes in the organization capabilities to manage the alignment between the Business and IT needs to drive the corporate's performance.

1.2.2 CONTROVERSY ANALYSIS

There is controversy statement in the journal of economic perspectives – Volume 14, Number 4 – Fall 2000, Erik Brynjolfsson and Lorin (Brynjofsson & Hitt, 2000) mentioned that in the firm-level studies in particular suggest that, rather than being paradoxically unproductive, computers have had an impact on economic growth that is disproportionately large compared to their share of capital stock or investment, and this impact is likely to grow further in coming years (long term strategic plan).

Their work point to organizational complements such as new business processes, new skills and new organizational and industry structures as a major driver of the contribution of information technology.

The information technology investment has to be seen as a strategic enterprise wide efforts and alignment amongst all firm / organization wide business units and supporting units in tandem and in written to gain the support / buy in by all stakeholders to deliver high performance to boost the firm performance.

Enterprise wide IT strategic plan (EITSP) with IT demand management (ITDM) plays an important role in the success of a digital transformation business. IT demand management

coordinates and integrates amongst other strategic activities like corporate strategic planning (CSP), IT Portfolio Management (ITPM), Enterprise Architecture (EA), Business IT Stakeholder Engagement (BISE), IT Governance & Transparency (ITGOV), IT Project Portfolio Management (ITPPM) to deliver sound EITSP to improve corporate / firm performance.

This ITDM process must be addressed at the strategic level by the board of directors and senior executives. (Alonso, Case Study of Strategic IT Demand Management in Organization - Exploratory Results, 2013)

(Alonso, Verdun, & Caro, IT, Senior Executives and Board of Directors Contribute to the Success of the Business: Implicates on the IT Demand Process - Life Cycle, 2009)

1.2.3 INCONSISTENCY ANALYSIS

Further study from the World Economic Forum 2016 Digital Transformation Initiative report it mentioned about unlocking USD 100 Trillion potential opportunities (Revenue Growth, Cost Saving, etc.) worldwide.

Cheaper and better technology is creating a more connected world: 8 billion devices are now connected to the internet; by 2030, that number is forecast to grow to 1 trillion.

As the cost of advanced technologies continues to fall, new applications will be opened for them, as well as opportunities to combine them in innovative ways. This unleashes "combinatorial" effects, where the capability of technologies working in tandem far exceed their capabilities when deployed separately.

From several of the journals, books, reports, no one have been addressed the importance of strategic management into corporate strategic plan (CSP) → include IT portfolio management (ITPM) to balance and to align Business Requirements together with IT Requirements → Use enterprise architecture (EA) to bridge the gap between business and information technology within corporate governance of the Enterprise → does good communication and clear understanding between business and IT requirements thru stakeholder engagement process (BISE) → use IT governance (ITGOV) to govern the enterprise based IT demand management (ITDM) to provide transparancy → and use IT project portfolio management (ITPPM) to prioritize all the enterprise projects gathered in the IT demand management process to deliver enterprise based IT strategic (Investment) plan (EITSP), and certainly need leadership (top / senior management) commitment and contribution and organization change (transformation) management execution capabilities & capacities (LEC) to ensure the successful delivery of the execution of EITSP to achieve the desired outcome corporate / enterprise wide bank performance (BP) which deliver return on asset (RoA) a commonly used measurement by investors (Berger, Molyneux, & Wilson, The Oxford Handbook of Banking, 2010).

In Summary this research tries to research integratively from EITSP, BP, LC, LEC, CSP, ITPM, EA, BISE, ITGOV, ITPPM, ITDM as described in the Table 1 of CGI Analysis i.e.:

Table 1: Controversial, Gap, Inconsistency Analysis of Previous Journals and Books

No.	Year	Representative Research Journal / Book	Title	Research Variable and Dimension											
				EITSP	BP	LC	LEC	ITIS	CSP	ITPM	EA	BISE	ITGOV	ITPPM	ITDM
THIS RESEARCH				Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Sources: Previous Journals and Books as stated in the references

1.3 PROBLEM STATEMENT

Given the pressure of the dynamic banking business environment :

1) Does the Indonesian Banks have already identified a clear strategy to meet the digital banking transformation challenges and put it in written as their corporate strategic plan (CSP) to be disseminate to all stakeholder to gain the buy in and support in the execution process?
2) Are the Indonesian banks' organization capabilities and leaders in the board of supervisory and board of directors are competent and contributes to prepare to meet the digital banking transformation and committed to involve in the execution? And put it into a written documentation enterprise wide, organize the necessary resources, and disseminate it to all level or organization to get all the stakeholders' buy in?
3) Does enterprise IT strategic plan (EITSP) have direct impact to Indonesian banking corporate performance to convince the banks' leaders that the IT investment drives bank staying competitive and delivers bank performance (BP) results?
4) Does Indonesian banks' organization has capabilities and practice IT demand management (ITDM) to be used to establish enterprise IT strategic plan (EITSP) to balance between business requirements (demand side) and support service (supply side) to business operations by coordinating and integrating enterprise wide business initiatives and operating model together with IT requirements and initiatives through IT portfolio management (ITPM), enterprise architecture (EA), IT project portfolio management (ITPPM) and IT governance (ITGOV) exercise transparently, and together they are gathered into the corporate strategic plan (CSP) and communicate them to all stakeholders clearly by business & IT stakeholder engagement (BISE) team.

In summary, this research proposes to draw a research model as follow:

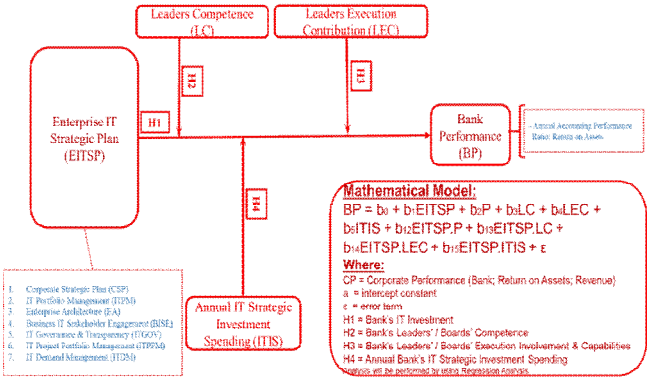


Figure 1: Proposed Hypothesis of Enterprise Strategic IT Plan Delivers Indonesian Bank Performance

1.4 RESEARCH OBJECTIVES

Based on the proposed hypothesis above, the objective of this research are:

1) To do an empirical study that enterprise IT strategic plan (EITSP) has a direct impact to Indonesian Banks' performance (BP) (reflected in their return on asset (RoA)) as discussed in the oxford handbook of banking (Berger, Molyneux, & Wilson, The Oxford Handbook of Banking, 2010)).
2) To study that those Indonesian bank practicing good enterprise IT strategic plan establishment with proper IT demand management processes coordinating and integrating corporate strategic plan (CSP), IT portfolio management (ITPM), enterprise architecture (EA), IT project portfolio management (ITPPM) through IT governance implementation (ITGOV) transparently), implemented and led by qualified / competent leaders whose involved and contributed in the execution and right amount annual IT strategic investment spending (ITIS) which delivers Bank Performance to ensure the business value of IT delivered.

1.5 RESEARCH BENEFITS

Enterprise IT strategic plan (EITSP) establishment processes with end to end (E2E) IMLC (Information Mangement Life Cycle) practice with the balance of IT demand and IT supply management execution will help commercial and non commercial bank enterprises especially in this research the indonesian banks facing the digital banking transformation challenges to avoid repeated and commonly mistakes happening in general enterprise IT management failures that costing / loosing a huge of money and resources invested.
This E2E IMLC also help the beginners / fresh graduated IT management related students to speed up their learning process, not to re-invent the wheel, to be insightful and skillful workforce / manager to manage the E2E IT Management Life Cycle and the day to day IT operation management in the holistic ways / methods.

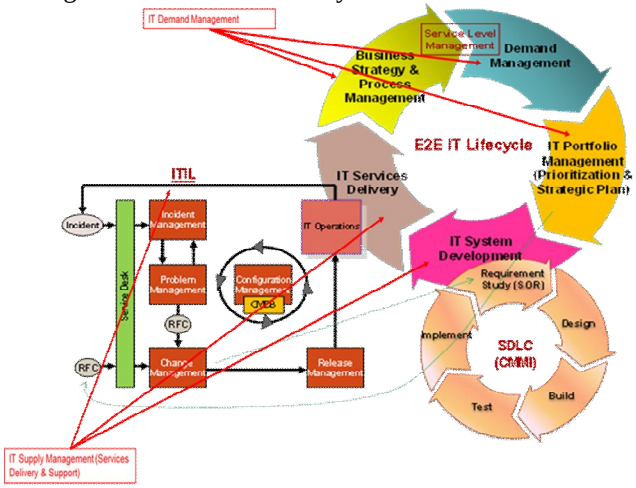


Figure 2: Proposed End To End (E2E) ICT Management Life Cycle

2. LITERATURE REVIEW, RESEARCH FRAMEWORK, HYPOTHESIS

2.1 PREVIOUS RESEARCH

Several books and journals with topics of strategic management (McDermott) (Tassabehji & Isherwood, 2014) (Porter M. E., Competitive Strategy Techniques for Analyzing Industries and Competitors, 1980) (Porter M. E., Competitive Advantage Creating and Sutaining Superior Performance, 1985) (Porter M. E., Towards A Dynamic Theory of Strategy, 1991), IT Demand Management (ITDM) (Alonso, Verdun, & Caro, The Importance of IT Strategic Demand Management in Achieving the Objectives of the Strategic Business Planning, 2008), E-Business (Kalakota & Robinson, 2001), Digital Enterprise (World Economic Forum in collaboration with Accenture, 2016), Digital Transformation Iniatives (World Economic Forum in collaboration with Accenture, 2016), Enterprise IT Strategic Plan (EITSP) (Gunawan, 2014) (Brynjolfsson & Hitt, 2000 Fall) (Alonso, Verdun, & Tovar, Information Technology to Help Drive Business Innovation and Growth, 2009) (Beccalli, Does IT Investment improve bank performance? Evidence from Europe, 2005), Corporate Strategic Planning (CSP) (Arasa & Obonyo, Nov 2012) (McGrath & Bates, The Little Book of Big Management Theories ... and how to use them, July 2013), IT Portfolio Management (ITPM) (Maizlish & Handler, IT Portfolio Management Step by Step - Unlocking

The Business Value of Technology, 2005), IT Governance & Transparency (ITGOV) (Grembergen, 2004), IT Demand Management (ITDM) (Alonso, Case Study of Strategic IT Demand Management in Organization - Exploratory Results, 2013) (Alonso, Verdun, & Caro, Description of the structure of the IT Demand Management Process Framework, 2016), Digital Enterprise (World Economic Forum in Collaboration with Accenture, 2016), ICT Success (Gentle, 2007), IT Service Delivery (Alonso, Verdun, & Tovar, Project Prioritization as a Key Element in IT Strategic Demand Management, 2008), IT Service Support (Gentle, 2007), Service Level Management (Gentle, 2007), Business Analysis (Baugh, Stakeholder Engagement - The Game Changer for Program Manageement, 2015), Business Value of IT (Hardvard Business School Press, 1999), Enterprise Architecture (Alonso, Verdun, & Caro, Enterprise Architecture Reponsabilities and People Roles, 2010) (Ross, Weill, & Robertson, 2006), etc. will be used for this research study references.

Some books (Grand Theory) published in the early 1980 may still relevant, and recently (2017) published books and journals those relevant to this research, which can be summarized in the below figure as follow:

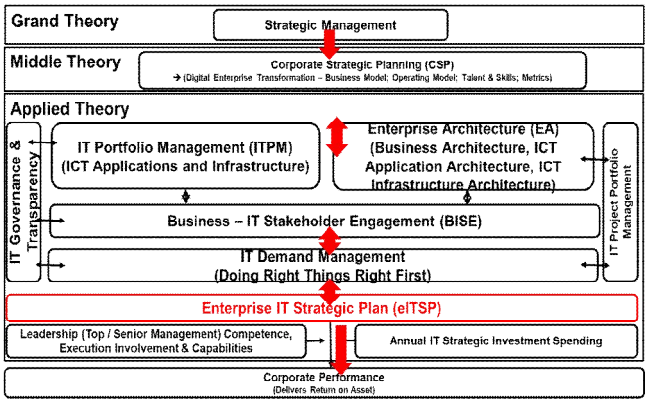


Figure 3: Related Theories Used in The Research

There has been no holistic and integrated enterprise IT strategic plan (EITSP) with IT Demand Management (ITDM) processes (involving CSP, ITPM, BISE, ITGOV, ITPPM) to be used to balance between business requirements and IT requirements to deliver the agreed and expected corporate performance as show in the CGI table above (Table 1). Especially in the Indonesia Banking Industry.

2.2 RELEVANT THEORIES

2.2.1 STRATEGIC MANAGEMENT

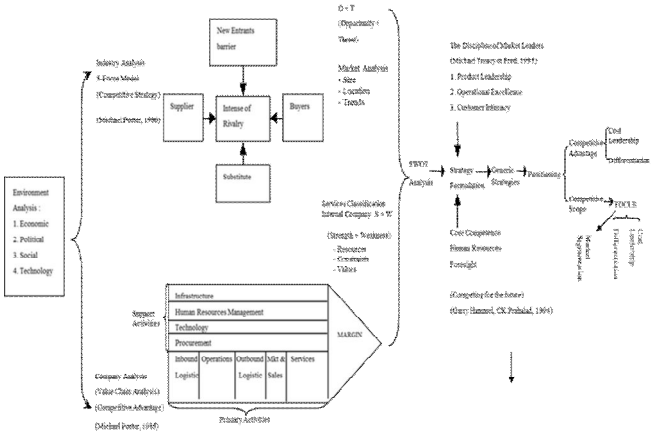
According to Michael Eugene Porter the guru on business strategy, a Harvard Business School Professor, strategy is a competitive position and there are 3 choices of generic strategy either a business firm want to deliver greater value to customers (Differentiation (innovation to improve customer experience)) or to create comparable value at lower prices (Cost Leadership), or to Focus on cost (niche – narrow market focus) or on differentiation (niche – narrow market focus).

And later on Michael E. Porter also to do an environmental analysis (National / Country) in his continued book of the competitive advantage of nations and proposed Porter's Diamond of National Advantage, there are 4 (four) broad attributes of the proximate environment (1. Factor Conditions; 2. Demand Conditions; 3. Related and Supporting Industries; then 4. Firm Strategy, Structure and Rivalry) (National Economic, Politic, Social and Technology) of a firm to have the greatest influence on its ability to innovate and upgrade (environmental determinants of innovation and upgrading).

After we do environmental analysis (nationally / country wide), a firm need to do an external industry analysis (in related and supporting industries) which Porter's proposed Five Forces Industry Analysis Framework a tool for analyzing competition of a business.

After doing the external industry analysis then a firm need to do an internal firm's activities value chain analysis as proposed by Porter's Value Chain and Value System Analysis.

In summary, I think that before a firm's making strategic decision, a firm need to start doing an National Level of environmental analysis (Diamond National Competitive Advantage) → then to do an external Industry analysis to see the opportunities and threat, and then to do an internal firm's activities value chain an values system analysis to complete the firm SWOT (Strength Weakness Opportunities and Threat) analysis as described in below figure:



Source: Adapted and summarized from Porter, 1980

Figure 4: Summary of Porter's Competitive Strategy

After accomplishes the SWOT analysis then a Firm can establishes a strategy formulation / positioning.

In my opinion today's digital enterprise phenomena is still can be analyzed, described/explained and strategized using the grand theory of Porter's strategic management.

There is widespread recognition among leaders in most industries that the role of digital technology is rapidly shifting, from being a driver of marginal efficiency to an enabler and even to a business partner of fundamental innovation and disruption.

Digitalization is the cause of large-scale and sweeping transformations across multiple aspects of business, providing unparalleled opportunities for value creation and capture, while also representing a major source of risk. Business leaders across all sectors are grappling with the strategic implications of these transformations for their organizations, industry ecosystems, and society. The societal and economic (socio-economic) implications of digitalization are contested and raising serious questions about the wider impact of digital transformation.

The reason why firms succeed or fail is perhaps the central question in strategy. It has preoccupied the strategy field since its inception four decades ago. The causes of firm success or failure encompass all the other questions that have been raised in this collection of essays. It is inextricably bound up in questions such as why firms differ, how they behave, how they choose strategies, and how they are managed. While much of the work in the field has been implicitly domestic, it has become increasingly apparent that any search for the causes of firm success must confront the reality of international competition, and the striking differences in the performance of firms in a given industry based in different nations.

I find that Porter's Strategy is still relevant to today's Digital Enterprise Transformation First Step to define the Firm's Competitive Strategy (Firm's Positioning) and determine the new Business model by observing National Diamond Competitive Advantage, External Industry Five Forces model and then Internal Firm's Infrastructure and Value Chain to determine the new Thorough Operating Model as outlined in the above Figure 4 the adopted summary of Porter's competitive strategy.

2.2.2 CORPORATE STRATEGIC PLAN (CSP)

(McGrath & Bates, The Little Book of Big Management Theories ... and how to use them, July 2013) McGrath and James state that in any competitive environment the difference between winning and losing is often the quality of planning. The GB (Great Britain) Cycling Team is renowned for the meticulous planning of its director David Brailsford. The team has been so successful since he took over that there have been dark mutterings by other counties about the use of drugs and even tiny motors in the hubs of wheels. The French in particular couldn't believe that Britain's improvement was down to exceptional preparation and planning, and at a meeting with David one of the French team pressed him hard to reveal the secret of Britain's success. Fed up with the incessant questioning David looked over his shoulder, leaned forward and whispered, 'The truth is we use really round wheels'. It seemed to satisfy the Frenchman.

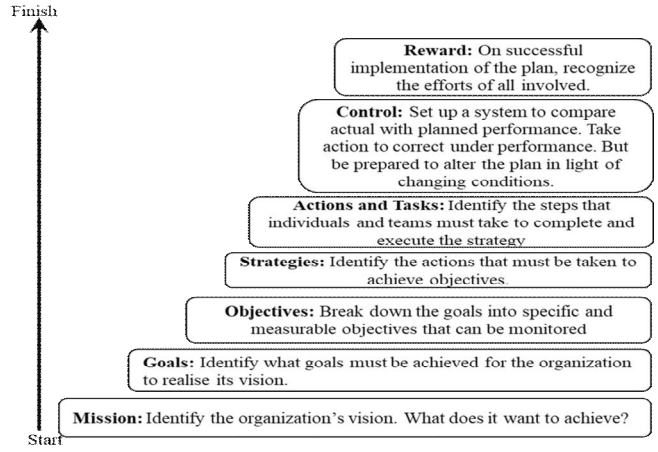
People find it hard to believe that good planning can significantly improve performance. Yet the same people are happy to subscribe to the belief that 'poor planning produces poor performance'. There is clearly an inconsistency in people's logic.

But he also stated that strategic planning won't solve all your problems. Planning can never be entirely accurate because it involves prediction and no one can tell you what's going to happen tomorrow let alone next year. Planning also provides you with a road map of where you want to go. Yes, events may require you to make a detour and road closures and traffic jams may disrupt your journey. But if you know your final destination you can constantly update your route even if that means you have to go via Cardiff to get to London from Birmingham (if the M6 road works don't end soon this may be the quickest route).

There are two types of plan that you will almost certainly be involved in, namely business and strategic. A business plan usually cover s a period of one year whereas a rolling strategic plan may cover three to five years. Personally I think any plan over three years contains more conjecture and wishful thinking than useful information. If you don't think that you are involved in strategic or business planning then I bet you either control or work to a budget. Like what is stated in the PBI No. 12/21/PBI/2010 about the bank must to submit annual bank business plan to the central bank of Indonesia (Bank Indonesia). Well, a budget is a business plan with a price ticket on it. And if it isn't then it's not a very good budget. Too often, the budget drives the business plan when what you really require is a realistic business plan which, when costed, becomes the budget.

Finally, to be effective a good strategy should encourage everyone in the organization to work together to achieve a common aim. Therefore it should not be imposed on staff. Rather, staff at all levels should be able to contribute to it and in doing so own it.

They also pointed out Gerry Johnson and Kevan Scholes suggestion that there are seven stages in any planning process. These are:



Source: (McGrath & Bates, The Little Book of Big Management Theories ... and how to use them, July 2013)

Figure 5: The 7 Seven Stages in any planning process

They suggested to use the seven-stage approach as a valuable overview of the stages that you need to go through if you are to produce a comprehensive and well-thought-out plan.
Identify which planning approach your organization favors – top down or bottom up.
Top-down approaches involve senior managers and a few planning experts' locking themselves away for a week and developing a plan with little reference to anyone else. In this case the role of middle manager is to accept what has been produced and implement it without question. If this is your organization's approach your job is to sell the plan to staff, even if you don't personally support the plan.
Bottom-up approaches involve collecting data from staff at every level and senior managers and planners using this to draw up the strategic plan. The role of the middle manager is to collect, analyze and summarize the most useful data before reporting it to the planning team. There will be more work for you in terms of feeding into the plan but implementation will be easier as staff will feel that their views were listened to.
Whatever your role, use one or two trusted staff to help you provide information/implement the plan.

2.2.3 IT PORTFOLIO MANAGEMENT (ITPM)

IT portfolio management is the application of systematic management to the provision of sound and proven business approach and optimized investments, projects and activities of enterprise Information Technology (IT). (Maizlish & Handler, IT Portfolio Management Step by Step - Unlocking The Business Value of Technology, 2005)
Examples of IT portfolios would be planned initiatives, projects, and ongoing IT services (such as application support). The promise of IT portfolio management is the quantification of previously informal IT efforts, enabling measurement and objective evaluation of investment scenarios.
(Maizlish & Handler, IT Portfolio Management Step by Step - Unlocking the Business Value of Technology, 2005) stated that IT portfolio management provides a sound and proven business approach to optimizing investments in information technology.
IT Portfolio Management is a combination of people, processes, and corresponding information and technology that senses and responds to change by Communicating effectively, with appropriate agility to rapidly reprioritize and rebalance investments and assets while creating and cataloging a detailed, value-based, risk assessment of the inventory of existing assets (IT Hardware Infrastructure, IT Software Applications, IT Human Capital) and do eliminating redundancies while maximizing reuse, and do scheduling personnel and other resources optimally, then do close monitoring and measuring project plans (costs, schedule, scope, timing, yield, risk, benefits, etc.) from development through post-implementation, including disposal at the end of life.
Several benefits of applying IT portfolio management approach for IT investments i.e. that agility of portfolio management is its biggest advantage over investment approaches and methods. Other benefits include central oversight of budget, risk management, strategic alignment of IT investments, demand and investment management along with standardization of investment procedure, rules and plans.
IT portfolio management is accomplished through the creation of three portfolios:

1) Application Portfolio - Management of this portfolio focuses on comparing spending on established systems based upon their relative value to the organization. The comparison can be based upon the level of contribution in terms of IT investment's profitability. Additionally, this comparison can also be based upon the non-tangible factors such as organizations' level of experience with a certain technology, users' familiarity with the applications and infrastructure, and external forces such as emergence of new technologies and obsolescence of old ones.
2) Infrastructure (Hardware) Portfolio - For an organization's information technology, infrastructure (Hardware) management (IM) is the management of essential operation components, such as policies, processes, equipment, data, human resources, and external contacts, for overall effectiveness. Infrastructure management is sometimes divided into categories of systems management, network management, and storage management. The ability of organizations to exploit IT infrastructure, operations and management sourcing/service solutions not only depends on the availability, cost and effectiveness of applications and services, but also with coming to terms with solution providers, and managing the entire sourcing process. In the rush to reduce costs, increase IT quality and increase competitiveness by way of selective IT sourcing and services, many organizations do not consider the management side of the equation. The predictable result of this neglect is overpayment, cost overruns, unmet expectations and outright failure.
3) Project Portfolio - This type of portfolio management specially addresses the issues with spending on the development of innovative capabilities in terms of potential ROI, reducing investment overlaps in situations where reorganization or acquisition occurs, or complying with legal or regulatory mandates. The management issues with project-oriented portfolio management can be judged by criteria such as ROI, strategic alignment, data cleanliness, maintenance savings, suitability of resulting solution and the relative value of new investments to replace these projects. More information and discussion in the later chapter section 2.2.6 IT project portfolio management (ITPPM) about this topic.

2.2.4 ENTERPRISE ARCHITECTURE (EA)

(Ross, Weill, & Robertson, 2006) In their research found that companies with a solid foundation (IT infrastructure and digitized business processes automating the company's core capabilities with three 3 key disciplines of 1. operating model, 2. Enterprise Architecture, and 3. IT engagement model) had higher profitability, faster time to market, and lower IT costs. These outcomes are universally beneficial and timeless.

Enterprise architecture (EA) is a well-defined practice for conducting enterprise analysis, design, planning, and implementation, using a comprehensive approach at all times, for the successful development and execution of strategy. Enterprise architecture applies architecture principles and practices to guide organizations through the business, information, process, and technology changes necessary to execute their strategies. These practices utilize the various aspects of an enterprise to identify, motivate, and achieve these changes.

(Niemann, 2006) A Comprehensive Enterprise Architecture (EA) management has strategic and operative aspects. Strategic tasks cover the identification of appropriate fields of activity for IT investments in accordance with business strategy and portfolio management. Enterprise Architecture management is cross-linked with other IT Management processes and delivers the necessary information for a sustainable governance. The continuous analysis of the IT landscape, the deduction of measures for optimization and its controlling also belong to the tasks of architecture management.

Enterprise Architecture is a structured and coordinated collection of plans for the design of the IT Landscape of a company, which represent in various details and views, focused on special groups of interest (e.g. managers, planners, clients, designers), different aspects of IT Systems (e.g. Data, Functions, Interfaces, Platforms, Networks), and their embedding within the system (e.g. goals, strategies, business processes) in past, present andfuture specifications. Source: (Niemann, 2006)

According to the Federation of EA Professional Organizations (FEAPO), Enterprise Architecture interacts with a wide array of other disciplines commonly found in business settings. According to FEAPO: An Enterprise Architecture practice collaborates with many interconnected disciplines, including performance engineering and management, process engineering and management, IT and enterprise portfolio management, governance and compliance, IT strategic planning, risk analysis, information management, metadata management, and a wide variety of technical disciplines as well as organizational disciplines such as organizational development, transformation, innovation, and learning. Increasingly, many practitioners have stressed the important relationship of Enterprise Architecture with emerging holistic design practices such as design thinking, systems thinking, and user experience design.

2.2.5 BUSINESS IT STAKEHOLDER ENGAGEMENT (BISE)

(Baugh, Stakeholder Engagement - The Game Changer for Program Manageement, 2015) Effective stakeholder engagement begins with the first conversation (communication); the more clearly program objectives are defined and understood, the smaller the gap between delivered results and expected results. To drive a successful program, we need to be able to gather and synthesize both hard data and conversational data. We should be able to articulate and communicate goals and objectives as they fit into an organizational strategy, all the way down to program Jeffrey (2009) in "Stakeholder Engagement: A Road map to meaningful engagement" describes seven core values for the practices of gaining meaningful participation of which perhaps the three most critical are:

1) Stakeholders should have a say in decisions about actions that could affect their lives or essential environment for life.
2) Stakeholder participation includes the promise that stakeholders's contribution will influence the decision
3) Stakeholder participation seeks input from participants in designing how they participate.

Stakeholder engagement provides opportunities to further align business practices with societal needs and expectations, helping to drive long-term sustainability and shareholder value.

Stakeholder engagement is intended to help the practitioners fully realise the benefits of stakeholder engagement in their organization, to compete in an increasingly complex and ever-changing business environment, while at the same time bringing about systemic change towards sustainable development.

2.2.6 IT GOVERNANCE & TRANSPARENCY (ITGOV)

(Weill & Ross, 2004) IT Governance simultaneously empowers and controls, in their research that top-performing enterprises generate returns on their IT investments up to 40 percent greater than their competitors. These top-performing enterprises proactively seek value from IT in a variety of ways:

1) They clarify business strategies and the role of IT in achieving them.
2) They measure and manage the amount spent on and the value received from IT.
3) They assign accountability for the organizational changes required to benefit from new IT capabilities.
4) They learn from each implementation, becoming more adept at sharing and reusing IT assets.

(Shi & Silvius, 2011) Cobit and ITIL are frameworks that are used to implement IT governance. Cobit 4.1 and ITIL V3. Both are complementary: Cobit 4.1 is a high-level framework

that contains all the IT processes and focuses on what needs to be put in place. ITIL V3 does not cover all processes, but adds more detail to the processes in scope. The focus is on how the different processes can be implemented. On the other hand, Cobit 4.1 provides more instruments for measurement and reporting with maturity models and metrics at different levels.

2.2.7 IT PROJECT PORTFOLIO MANAGEMENT (ITPPM)

(Miranda, Alonso, Procel, & Gomez, January 2018) In today's business environment, a key factor for decision making is the IT projects portfolio management (ITPPM). IT projects must be aligned with the objectives, goals and strategies, which is achieved through the appropriate application of a methodology for ITPPM. The experienced application of a methodology depends on the experience of the managers of ITPPM, considering that the application of methodologies generates best practices, it becomes necessary to study some of the more representative methodologies and obtain the best practices that allow novice administrators to initiate their portfolio management activities in information technology projects. In this article, three methodologies are studied, from which best practices are obtained, as results; a hierarchy of best practices is obtained so that project managers can be guided or introduced in their field.

IT Project Portfolio Management (ITPPM) is the centralized management of the processes, methods, and technologies used by project managers and project management offices (PMOs) to analyze and collectively manage current or proposed projects (Project Prioritization) based on numerous key characteristics. The objectives of PPM are to determine the optimal resource mix for delivery and to schedule activities to best achieve an organization's operational and financial goals, while honoring constraints imposed by customers, strategic objectives, or external real-world factors. (Alonso, Verdun, & Tovar, Project Prioritization as a Key Element in IT Strategic Demand Management, 2008) They conclude that Project prioritization as part of the demand management life cycle is regarded as one of the keys to an enterprise's business success.

It is very important for the strategic planning committee to meet regularly to evaluate company performance and be able to make the necessary adjustments to strategies for ongoing projects. It is very hard to speak of IT successes and failures if projects were not prioritized, aligning the objectives of the projects portfolio with business objectives. At present, the challenge is to build a business model for which the CIO, the senior executives and the business line managers are responsible.

The IT Project Portfolio Management Office plays an important role within the enterprise and is responsible for the prioritizing projects, deciding which will most benefit the enterprise, which projects will be implemented first, tracking ongoing projects, making necessary corrections to projects, constantly managing the projects awaiting implementation and new projects that are added to the portfolio.

It is very important for project prioritization to take into account the four key project elements: financial value, the risks of the project, the project strategy and the adequacy of current systems. First the value of each element should be determined. Then the project should be assessed as a whole. Other project-dependent factors can then be added to arrive at the final prioritization of the projects.

2.2.8 IT DEMAND MANAGEMENT (ITDM)

Advances in Information and Communication Technology (ICT) and the accompanying impacts on socio-economic development have led to consider a new ICT unique knowledge, questions, methodologies, explanatory models and ethical problems that are not easily addressed by the existing Computer Science & Technology related knowledge, questions, methodologies and models. (Gentle, 2007)

Furthermore, ICT is a relatively a new discipline (may be the Integration of Information and Communication Technology start happening from 1995) compared to the older subjects such as Computer Science, Engineering and Mathematics. The diversity and inter-disciplinary nature of ICT and the multiplicity of its uses in other sciences make it hard to define ICT and to prescribe how ICT should be carried out.

ICT should refer to the influence brought about / on socio-economic by this new technology.

Then the inclusiveness given to the name "ICT" / Digitalization indicates the significant shift in both the technology itself and our perception about it.

ICT development is creating technologies that have the potential to catalyze social change, and mapping human needs to technologies that directly respond to specific development problem solutions. ICT can distribute wealth between the developing and developed countries by bridging the digital divide. The discipline of ICT development has dramatically grown in the past one decade (since the explosion use of Internet in 1995). The dimensions of growth identified are enhanced ICT access and standardization of work procedures which brings about accountability and transparency. Due to new comer technology, multi-disciplines involved in the ICT projects to deliver the expected business value.

There should be a balanced implementation of IT Demand and IT Supply management in the Enterprise IT Strategic Plan and figure out how to improve the benefits of IT investment in the Banking Industry in Indonesia by implementing IT Governance with the balance of IT Demand Management (The Organization Capabilities to prioritize the Corporate Strategic Initiatives by coordinating and integrating Corporate Strategic Plan (CSP) with IT (Application & Hardware Infrastructure) Portfolio Management (ITPM), Enterprise Architecture (EA), Business-IT Stakeholder Engagement (BISE), IT Governance & Transparency (ITGOV) and IT Project

Portfolio Management (ITPPM) to deliver Corporate Performance Objectives & Competitiveness.
It is called the whole process of IT Demand and IT Supply Management as "End To End Information & Communication Technology (ICT) Management Life Cycle (E2E IMLC)"
IT demand management, however, is not a single process but rather a "developed organizational capability". This capability requires Six Key organizational enablers working in concert (strategic initiative management (corporate strategic planning), IT Portfolio (IT Application Software & Hardware Infrastructure) management, Enterprise Architecture, Business-IT Stakeholder Engagement, IT Governance and Transparency and IT Project Portfolio Management).
Together these mechanisms enable organizations to allocate capital and human resources to the highest-value IT opportunities. Of equal if not greater benefit is that active demand management enables IT organizations to forge more effective working partnerships with the business. Instead of being relegated to the role of order-taker, IT organizations can now engage in proactive discussions with their business partners to establish a future agenda for IT. And because the supply side works in union with the demand side, this enables enhanced capacity planning of benefit to both. For the first time, many IT organizations will be able to get a step ahead of the business and build capability to enable new strategic business initiatives with shortened time to market. This has been the prized but elusive goal of IT. In organizations where IT is recognized for its strategic importance and/or IT processes have reached a level of maturity, managing IT demand has likely begun; for all others, the time to manage IT demand has arrived as described in the figure above.
E2E IMLC includes every phase of a "ICT Management Processes" from its beginning to its end. It is generally applied to information & communication technology management from business model, business & IT management alignment, ICT Enterprise Architecture, ICT Portfolio Management, Enterprise ICT Projects & Planning Management, ICT & Business Requirement Definition, ICT System Analysis & Design, ICT System Acquisition & Implementation Project Management, Application Development & Management, Application Test Management, ICT System Service Delivery & Support Management, and ICT Service Assurance Management.

2.2.9 THE LEADERS (TOP / SENIOR MANAGEMENT) COMPETENCE, COMMITMENT & EXECUTION CONTRIBUTION

(Alonso, Verdun, & Caro, IT, Senior Executives and Board of Directors Contribute to the Success of the Business: Implicates on the IT Demand Process - Life Cycle, 2009) in this journal paper, they conclude that today's business environment is characterized by permanent changes due to various economic, technological, social, cultural factors.
Every day, companies need to work within the IT governance (ITG) framework to assure their business goals are aligned with IT objectives. Only this way will they become competitive and successful businesses able to get value delivery from IT systems, manage IT system risks, manage IT resources and measure IT systems performance. The coordinated work of senior company executives through a permanent communication channel is very important for performing all these tasks.

The importance of the Information Technology (IT), senior business executives and board of directors that contribute to the success of the business, as these senior executives are implicates on the IT demand process life cycle, to future business success driven from within the IT governance. The CEO is a company's top executive and handles the business of government. Next in importance to the CEO is the CIO. The CIO liaises with the CEO, working on the best strategies to develop the business and make better decisions. They are supported by the CFO, the head of business finance, the CHRO, who plays an important role in the provision of adequate human resources for the business, and the COO, who is responsible for operations that are performed within the company. These senior executives are a great team. If they liaise effectively, it will be easier to achieve business objectives, yielding a high added value for the company. The Board of directors has the ultimate executive responsibility for the formulation and implementation of the group's business strategy and for sustainable value delivery to its stakeholders.

3. RESEARCH METHOD

3.1 OPERATIONALIZTION OF VARIABLES

As explained in the previous chapter, there are 1 independent variable i.e.: bank / performance (BP) (% RoA), and 1 dependent variables (EITSP) and 3 moderating variables (LC, LEC & ITIS) proposed in this research and their dimension, indicator & measurement as described in the table below:

Table 2: Operationalization of Variables

Variable	Dimension	Indicator	Scale
Corporate (Bank) Performance	Return On Assets	Annual Bank's Profitability vs Assets	Ordinal (Likert Scale)
Enterprise Information Techonology Strategic Plan (EITSP)	Corporate Strategic Plan (CSP)	Board Participation	Ordinal (Likert Scale)
An Enterprise Information Technology Strategic Plan (EITSP) is an enterprise wide processes aimed at discovering the organizational resources and IT in an organization, to direct the technological and information architecture to its strategic objectives		Strong Determination of BoD and Senior Management	Ordinal (Likert Scale)
J01 - (Gunawan H. & Serlyna, March 2018); J		Clear communication channels to exchange experience between senior management	Ordinal (Likert Scale)

Sources: Previous Journals and Books as stated in the references

3.2 POPULATION AND UNIT ANALYSIS

This research reviews the research variables on bankwide level unit of analysis. Data is collected from both primary and secondary data sources. Primary data used in this research is obtained from questionnaire distributed to top 20 banks in assets size of total 128 banks whose assets dominate 72.5 % of total Indonesia banks' assets, distributed to 174 Directors level respondents. Secondary data is obtained from the internet and other public publications, such as industry and capital market data. Due to time constrains and the accessibility, it was not possible to conduct a survey for the entire Indonesia Banks population, therefore like pareto windows / 80:20 rules theory in this research I focus to top 20 banks in assets size who dominate 72.50 % of total Indonesia banks' assets, and mostly are banks categorized as Book 4 in Indonesia Central Bank (Bank Indonesia) those are "very prepared" in terms of strategy clarity and organization capability and capacity as stated in the PwC's 2017 report (PWC, 2017) mentioned in the previous chapter.

3.3 SAMPLING TECHNIQUES, SAMPLE SIZED AND SETTING

Based on "Statistik Perbankan Indonesia (SPI)" (Indonesian Banking Statistics) produce by Indonesia Monetary Authority (OJK) Vol. 11, No. 12, November 2013, there are 120 banks in Total in Indonesia. 4 State Owned Banks, 36 Foreign Exchange Commercial Banks (Bank Devisa), 30 Non-Foreign Exchange Commercial Banks (Bank Non Devisa), 26 Regional / Provincial Development Banks (BPD – Bank Pembangunan Daerah), 14 Joint Venture Banks, 10 Foreign Owned Banks.
And based on Bank Indonesia's Regulation's PERATURAN BANK INDONESIA NOMOR 14/26/PBI/2012 Chapter 3, There is 4 Bank Category based on Capital:

Article 3

1) Based on Core Capital owned, Banks are grouped into 4 (four) BOOKS, namely:
   a) BOOK 1 is a Bank with Core Capital up to less than Rp1,000,000,000,000.00 (one trillion Rupiah);
   b) b. BOOK 2 is a Bank with a core capital of at least equal Rp1,000,000,000,000.00 (one trillion Rupiah) up to less than Rp5,000,000,000,000.00 (five trillion Rupiah);
   c) BOOK 3 is a Bank with a core capital of at least equal Rp5,000,000,000,000.00 (five trillion Rupiah) up to less than Rp30,000,000,000,000.00 (thirty trillion Rupiah); and
   d) BOOK 4 is a Bank with a core capital of at least equal Rp30,000,000,000,000.00 (thirty trillion Rupiah).

These 120 banks' quantitative secondary data available in the market and a questionaires will be developed to do an empirical study and an individual interview in a focus group are planned for the top 20 banks in assets who dominate 72.50% of Total Indonesia Banks' assets which consist both Book 4 Category Banks (Bank Buku 4) and Book 3 Category Banks (Bank Buku 3) (those are stated in the PWC Indonesian Banking Survey 2017 are prepared for Digital Banking Transformation Strategic Change), to be executed for exploratory nature of this research study.
An individual informal interview and a focus group is methodology widely used in various disciplines as a qualitative research technique only for those banks who are prepared for Digital Banking Transformation.
And Based on Price Waterhouse Cooper Indonesian Banking Survey 2017, there is Buku 4's Banks feel (57%) they are prepared to meet The Enterprise Banking Digitalization, but only 32% in Buku 3's Banks, and 11% in Buku 1& 2 Banks.

3.4 DATA COLLECTION TECHNIQUES, TOOLS AND SOURCES

This research encompasses the following aspects of research samples and analysis:

1) Sample size. As the quantitative approach I will use simple regression analysis (Mooi, Regression Analysis, March 2014) which is one of the most frequently used tools in market research to analyze the relationships between one / many independent and one dependent variable, indicate if independent variables have a significant relationship with a dependent variable, and indicate the relative strength of different independent variables' effects on a dependent variable. The sample size is based on 80:20 rules focusing on top 20 banks in asset size whose asset dominate 72.50% of total Indonesia Banks' assets, and consist of Book 4 and Book 3 banks which according to PwC Indonesian Banking Survey 2017 reports are prepared for Digital Banking Transformation Strategic Change, to be used for this research study.
2) Sampling approach. Since the qualitative approach nature of this research to ensure to gather the quality processes of the enterprise IT strategic plan (EITSP) of the banks which delivers bank corporate performance then we have to distribute the suvey questionnaire to the banks' leaders (Board of Supervisory and / or Board of Directors and / or 1 level down of BoD high rank officers) who have corporate / bank wide exposure and knowledge to ensure the quality of the answered survey questionnaires.
3) Respondents. As mentioned in the above, the respondents were banks' leaders (executives, such as Board of Supervisory and / or Board of Directors and / or 1 level down of BoD high rank officers

(EVP, SVP, VP, GM level) who have corporate / bank wide strategy, exposure and knowledge.

Total respondents participated in this survey are 174 people.

4) Questionnaires. The data of this research was gathered through questionnaires. Questionnaires were administered personally, mailed and / or emailed and / or Whatapps to the respondents.

Firstly, questionnaires, whenever possible, were administered personally by researcher to respondents. Pre-printed blank questionnaires were given directly to respondents. The filled questionnaires could be returned directly to researcher (hard copy) or through email (scanned copy). Secondly, questionnaires were distributed via mail, and / or email as attachment. Respondent, could check listed or highlighted their answers in the questionnaires sheets and mailed / and / or emailed back their answers to researcher whenever they have completed them.

The Questionnaires employed the Likert rating scale (1 to 4). List of questionnaires are attached in another different file.

3.5 HYPOTHESIS TESTING

Quantitative approach through survey / cencus to the top 20 commercial Indonesia banks in assets who dominate about 72.5% of total Indonesia banking asset, and Simple Regression Analysis may be used.
Results for the individual informal interview (focus group) may then be utilized to complete hypotheses derived from the research model.

4. RESEARCH RESULTS, DISCUSSION AND IMPLICATION

This chapter outlines the research results using the combination of quantitative and qualitative (mix method) approach and its discussion based on the proposed research model described before.

Both approaches aimed to understand the impact of the dependent variable (the bank performance using annual management accounting performance preferred used by the investors i.e.: RoA (Berger, Molyneux, & Wilson, The Oxford Handbook of Banking, 2010)) and the other relevant independent variable (enterprise IT strategic plan (EITSP) and moderating variables (leaders competence (LC), leaders' execution contribution (LEC), and annual IT strategic investment spending (ITIS).

4.1 EMPIRICAL (QUANTITATIVE) & QUALITATIVE (MIXED METHOD) SURVEY QUESTIONAIRES' POPULATION AND DISTRIBUTION OF RESEARCH SAMPLES & RESULTS

The objective of the quantitative approach is to understand and examine the relationships of research constructs, i.e.: Return on Assets a measure of Bank Performance usually used by economic and investors (Berger, Molyneux, & Wilson, The Oxford Handbook of Banking, 2010), Enterprise IT Strategic Plan (EITSP) (the quality of the plan) (Alonso, Verdun, & Tovar, Information Technology to Help Drive Business Innovation and Growth, 2009) (Beccalli, Does IT Investment improve bank performance? Evidence from Europe, 2005) (Brynjofsson & Hitt, 2000) (Chen & Zhu, 2004) (Gentle, 2007) (Leckey & Osei, 2010) (Lientz B. P., 2010), bank leaders' competence (LC) , and bank leaders' execution contribution (LEC) (Alonso, Verdun, & Caro, IT, Senior Executives and Board of Directors Contribute to the Success of the Business: Implicates on the IT Demand Process - Life Cycle, 2009), and annual Information Technology strategic Investment Spending (ITIS) (Kauffman & Weill, 1989) (Keramati, Azadeh, Gohar, & Mofrad, 2012) (Leckson-Leckey, Osei, & Harvey, 2011) (Snapp, 21 October 2013).
This research focuses on the Management Information System's Enterprise Information Technology (IT) Strategic Plan (EITSP) and its establishment processes including the correlational relationship amongst the variables associated with the research to understand whether the quality of the Enterprise IT Strategic Plan (EITSP) , the annual IT strategic Investment Spending (ITIS) , the bank leaders' competence (LC), and the bank leaders' execution contribution (LEC) delivers the Indonesia banks' performance.

The distribution list of banks and number of respondents is described in the table 3 below:

Table 3: Questionnaire Distribution (2019) To 20 Biggest Bank in Asset (2018)

No.	Nama Bank	Jumlah Buku Questionaires (Sesuai Jumlah Direktur)	Total Assets (in Mio Rupiah)
	Total Indonesia Banking Industry (Bank Umum (Commercial Bank))		7,837,634
1	Bank 1	12	1,097,368
2	Bank 2	11	1,003,465
20	Bank 20	7	55,638
	T O T A L	174	5,682,212
			72.50%

Source: www.kinerjabank.com (2018) and BI's / OJK's Statistik Perbankan Indonesia (2014 – 2018)

As shown in Table 3 the summary of the Data gathered, the bank performance dependent variable RoA data is contained the accounting percentage ratio of the banks' Return number divided by the banks' asset size gathered from the secondary data market provided by OJK (Statistik Perbankan Indonesia (SPI)) and www.kinerjabank.com for further use of the multi variables regression analysis using Microsoft Excel Data Analysis Tool Pack.

The independent variable EITSP is contain the same information of "exist" (equal to 1) because of the regulation PBI No. 9/15/PBI/2007 Penerapan Manajemen Risiko Dalam Penggunaan Teknologi Informasi Oleh Bank Umum (Risk Management Implementation in the Use of Information Technology by Commercial Bank) of Indonesian Central Bank (Bank Indonesia) and later on the OJK (Otoritas Jasa Keuangan / Monetary Authority of Indonesia), that mandate all Indonesia commercial bank have to have Enterprise Information Technology Strategic Plan.

Therefore, in this research, I use the Quality of EITSP by surveying the processes of the establishment of the EITSP involving the elements of Corporate Strategic Plan (CSP), IT Portfolio Management (ITPM), Enterprise Architecture (EA), Business IT Stakeholder Engagement (BISE), IT Governance & Transparency (ITGOV), IT Project Portfolio Management (ITPPM) and IT Demand Management (ITDM) and use the data collected to average to represent the quality processes of the Enterprise IT Strategic Plan (EITSP). I use ordinal likert scale 1 to 4 (1 = do not agree; 2 = somewhat agree; 3 = agree; 4 = strongly agree) data and later on the data are transformed into scale of 2 categories for better help and easier interpretation and using a mathematical formula so the original values of a variable are changed consistently (Mooi & Sarstedt, A Concise Guide to Market Research - The Process, Data, and Methods Using IBM SPSS Statistics, 2011) to be 1 means for High Quality of EITSP establishment processes and 0 means Average Quality of EITSP establishment processes.

And other 2 independent variables of Leaders' Competence (LC) (x variable 1) and Leaders' Execution Contribution (LEC) (x variable 2) are using ordinal likert scale 1 to 4 (1 = do not agree; 2 = somewhat agree; 3 = agree; 4 = strongly agree) and another 1 dependent variable annual IT strategic Investment Spending (ITIS) (x variable 3) is using likert scale of 4 (1 for ITIS $\leq$ 1% Revenue; 2 for ITIS $\geq$ 1% $\leq$ 5% Revenue; 3 for ITIS $\geq$ 5% < 10% Revenue; 4 for ITIS $\geq$ 10% Revenue) then these likert scale of 4 data are transformed into scale of 2 categories for better help interpretation and using a mathematical formula so the original values of a variable are changed consistently (Mooi & Sarstedt, A Concise Guide to Market Research - The Process, Data, and Methods Using IBM SPSS Statistics, 2011) to be 1 means for Mainstream ITIS = < 8% Revenue and 2 means Leader ITIS >= 8% Revenue.

And later on both LC and LEC data also transformed into 2 Categories i.e. LC to be 1 means Highly Competent, and 0 means Average Competent, while LEC to be 1 means High Execution Contribution and 0 means Ordinary Execution Contribution.

Due to the Bank Indonesia's regulation, all banks are mandated to submit their IT Strategic Plan annually, then the EITSP contain all "1" figure, then I use the average quality of establishing the Enterprise IT Strategic Plan of the 7 variable i.e.: CSP, ITPM, EA, ITGOV, BISE, ITPPM, ITDM to prove the quality processes of EITSP establishment having a positive impact to deliver the banks' performance (RoA).

Below is table 4 are the linear regression analysis results which shows no one significant p-value < 0.05, which means there is no one independent variable (Enterprise strategic information technology plan - EITSP, Leaders' Competence - LC, Leaders' Execution Contribution - LEC, annual information technology strategic investment spending - ITIS) has significant strong correlation relationship with the dependent variable (bank performance BP = RoA).

Table 4: Regression Analysis Results (After Data Transformation) for the top 20 biggest assets banks

	Coefficients	*Standard Error*	*t Stat*	*P-value*
Intercept	0.019223729	0.004313031	4.457127286	0.000783059
EITSP (Transformed)	7.62712E-05	0.013167475	0.005792393	0.995473547
LC (Transformed)	0.001922034	0.007373993	0.260650358	0.798781183
LEC (Transformed)	-1.86441E-05	0.006551965	-0.002845569	0.997776326
ITIS (Transformed)	-0.002564407	0.007934823	-0.323183857	0.752118275

Below is the table 5 is the summarize of the hypothesis testing results:

Table 5: Hypothesis Testing

Hypothesis	t-Value	p-Value	Coefficient	Conclusion
H1: EITSP - Enterprise Information Technology Strategic Plan Delivers Bank Performance (BP) (RoA)	0.005792393	0.995473547	7.62712E-05	H1: Rejected Due to p-value > 0.05 although has positive coefficient
H2: LC - Leaders' Competence influences / moderates the EITSP delivering BP	0.260650358	0.798781183	0.001922034	H2: Rejected Due to p-value > 0.05 although has positive coefficient
H3: LEC - Leaders' Execution Contribution influences / moderates the EITSP delivering BP	-0.002845569	0.997776326	-1.86441E-05	H3: Rejected Due to p-value > 0.05 although has positive coefficient
H4: ITIS - annual IT strategic Investment Spending influences / moderates the EITSP delivering BP	-0.323183857	0.752118275	-0.002564407	H4: Rejected Due to p-value > 0.05 although has positive coefficient

Both H1:EITSP and H2:LC have a positive correlation coefficient with bank performance (BP = RoA) but with no significant p-value > 0.05 that reject both hypothesis.

While the H3:LEC and H4:ITIS both have a negative correlation coefficient with the bank performance (BP=RoA) but with no significant p-value > 0.005 that reject both hypothesis too.

4.2 THE RESEARCH RESULT AND DISCUSSION OF BANK PERFORMANCE (BP / RoA) DEPENDENT VARIABLE

Bank business performance (Return on Asset) (BP) is an accounting management measurement by percentage of return divided by bank total asset (return / bank's total asset) (Berger, Molyneux, & Wilson, The Oxford Handbook of Banking, 2010), in the ch. 18 Joseph Hughes and Loretta Meser explained the non-structural approaches simply relate to the use of accounting / financial ratios to measure bank performance.

And in the page 96 in the same book, it has been explained that in the era of global competing financial institutions such as J.P. Morgan Chase, Merrill Linch, Glodman Sachs, and Salomon Brothers, their performance determined more by economic and investor considerations than by regulatory requirements that allows these global financial institutions to bolster significantly more impressive accounting ratios such as Return on Assets and Return on Equity.

Only the top 4 (in bank asset size) banks' RoA and no. 10 and no. 19 banks' RoA are above the average RoA of Indonesia Banking Industry.

4.3 The RESEARCH RESULT AND DISCUSSION OF EITSP INDEPENDENT VARIABLE

Enterprise information technology strategic plan (EITSP) is a document determining the enterprise wide organization's information arcthitecture in the light of strategic considerations, such as missions, goals, and priorities of the organization, as well as the action plan required to access systems and databases in organizational level. It is the charter and master plans of the organization in context of information systems and, more generally, information technology (Akbarifar & Hamdi, February 2016). As mentioned in the chapter 1.1 (research background / introduction) that there is a indonesian central bank (Bank Indonesia)'s regulation No. 9/15/PBI/2007 about the implementation of risk management in the use of information technology in bank, and considering that information technology is a bank's valuable asset and its execution is not only the responsibility of IT unit, but all stakeholders who use it, then it mandates all bank in Indonesia to have enterprise wide information technology strategic plan (EITSP) and both banks' supervisory and board of directors have to supervise actively in the implementation of risk management in integrated way bank-wide-ly (enterprise) aligning with business needs in every stages of the use of information technology.

In this research, I try to research and to confirm that whether Indonesian banks do an integrated and coordinated and enterprise wide information technology strategic plan (EITSP) in the quality manner in the establishment of their EITSP processes that deliver the Indonesia bank performance.

In the research result, as discuss before and shown in the table 5 the statistic results rejects the H1:EITSP due to the p-value > 0.05 while having a positive correlation coefficient of 7.62712E-05 with the bank performance (BP / RoA).

This may be caused by the numbers generated by the 20 banks are varies and some are below the average quality of the EITSP of 2.20 as shown in the figure 6, while in the top 4 banks as shown in the figure 6 below, it shows that the top 4 banks have a good EITSP and also a better bank performance RoA above Indonesia banking industry's RoA average (2.55%).

Based on my experience working at the one of the top 5 banks and information technology in the Indonesia banking industry, the bank performance achievement resulted from a coordinated, integrated, team worked done and supported by all the staffs, business units and operating / supporting units of the bank, and also the involvement, contribution and leading role of the bank leaders to make it happen in the execution / implementation. These factors also need to be supported by the readiness of the organization, the bank leaders' and the staffs' competence. All these organization competence and readiness may need adequate financial resource support that reflected by the Bank Indonesia / Central Bank of Indonesia's bank category regulation discussed before which mentions the minimum core capital requirements, and the top 4 banks certainly are categorized into Book 4 (BUKU 4) banks.

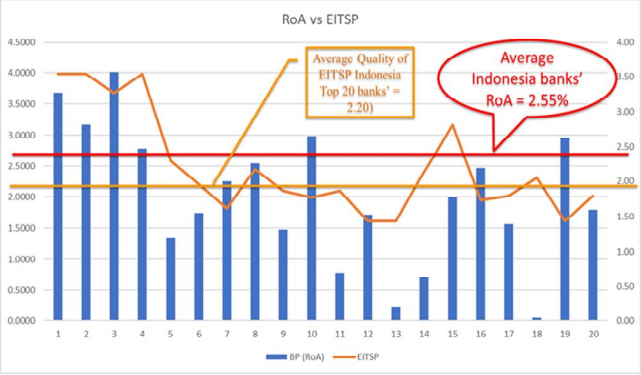


Figure 6: Top 20 Biggest Bank in Asset (2018) RoA vs EITSP

4.4 THE RESEARCH RESULT AND DISCUSSION OF BANK LEADERS' COMPETENCE (LC) INDEPENDENT / MODERATING VARIABLE

Bank Leaders' Competence (LC) plays important role in today's business dynamic environment (Alonso, Verdun, & Caro, IT, Senior Executives and Board of Directors Contribute to the Success of the Business: Implicates on the IT Demand Process - Life Cycle, 2009) in this journal paper, they conclude that today's business environment is characterized by permanent changes due to various economic, technological, social, cultural factors. The Board of directors has the ultimate executive responsibility for the formulation and implementation of the group's business strategy and for sustainable value delivery to its stakeholders. So as to the importance of the BoD's competence.

In the research result, as discuss before and shown in the table 5 the statistic results rejects the H2:LC due to the p-value > 0.05 while having a positive correlation coefficient of 0.0019 with the bank performance (BP / RoA).

This may be also caused by the numbers generated by the 20 banks are varies and some are below the average quality of the LC of 3.44, while in the top 4 banks it shows that the top 4 banks have a better LC than the average LC of Indonesia Top 20 banks and also a better bank performance RoA above Indonesia banking industry's RoA average (2.55%).

In today's globalization digitization business dynamic challenges in the financial services, leaders in the organization have to be competence in multi skills (digital business and technology advancement and integration challenges) and multi culture as the consequence to face the globalization of the business that requires multi culture talents dynamic exchanges management. Thus information technology investment may also involve in the investment of the human capital from leaders to staffs.

4.5 THE RESEARCH RESULT AND DISCUSSION OF BANK LEADERS' EXECUTION CONTRIBUTION (LEC) INDEPENDENT / MODERATING VARIABLE

(By, 2005) the execution successful organization change management (sometimes abbreviated as OCM to differentiate with information technology application software development code change management (CM)) is crucial to any organization in order to survive and succeed in the present highly competitive and continuously evolving business environment. It needs the Leaders' team (BoD) involvement in the execution of the transformation / organization change management and their contribution during the execution processes.

In the research result, as discuss before and shown in the table 5 the statistic results rejects the H3:LEC due to the p-value > 0.05 while it also having a negative correlation coefficient of -1.86E-05 with the bank performance (BP / RoA).

This may be also caused by the numbers generated by the 20 banks are varies and some are below the average quality of the LEC of 2.978, while in the top 4 banks it shows that the top 4 banks have a better LEC than the aveage LEC of 2.978 of Indonesia Top 20 banks and also a better bank performance RoA above Indonesia banking industry's RoA average (2.55%).

As explained in the above section Leaders' Competence (LC), in today's globalization digitization business dynamic challenges the landscape snapshot 2020 and the financial services disruption (Yuswohady, Fatahillah, Rachmaniar, Brillian, & Rachmat, 2019), leaders in the organization have to have not only the competence but also to have a leap digital business strategy and willing to lead and to contribute during the execution of the implementation of the digital business strategy to ensure the successful of the digital business strategy delivery.

4.6 THE RESEARCH RESULT AND DISCUSSION OF BANK PERFORMANCE AND ANNUAL IT STRATEGIC INVESTMENT (ITIS) INDEPENDENT / MODERATINB VARIABLE

Several studies done around the world, like (Beccalli, Does IT Investment improve bank performance? Evidence from Europe, 2005), (Leckey & Osei, 2010) found that Banks which maintain high levels of investments in IT (later on become ICT = Information & Communication Technology and nowadays become Digital Technology), then increased / improved Return on Assets (ROA) and Return on Equity (ROE).

In the research result, as discuss before and shown in the table 5 the statistic results rejects the H4:ITIS due to the p-value of 0.752 > 0.05 while it also having a negative correlation coefficient of -0.00256 with the bank performance (BP / RoA).

This may be also caused by the numbers generated by the 20 banks are varies and some are below the average quality of the ITIS of 2.5025, while in the top 4 banks it shows that the top 4 banks have a better ITIS than the average ITIS of 2.5025 of Indonesia Top 20 banks and also a better bank performance RoA above Indonesia banking industry's RoA average (2.55%).

It shows that the top 4 biggest asset banks who delivers significant bank performane (RoA far above average Indonesian banks' RoA) and in the same time they have also been a leading in investing the information technology annually (ITIS).

4.7 THE SUMMARY OF THE RESEARCH RESULT FINDINGS

As discussed / explained above, the following is the summarized research results findings:

1. There is no significant statistic regression testing result supporting the 4 (four) hypothesis proposed (p value ≤ 0.05) although there are some positive coefficient relationship to Bank Performance) to deliver bank performance (BP / RoA). There might be due to the varies number from the top 20 banks.
2. In the top 4 banks, they showed a better quality processes of Enterprise Information Technology Plan establishment meaning involving all organizations units involvement as a team in the process through IT Demand Management coordination and integrating process i.e. Corporate Strategic Plan (CSP), IT Portfolio Management (ITPM), Enterprise Architecture (EA), Business IT Stakeholder Engagement (BISE), IT Governance & Transparency (ITGOV), and IT project Portfolio Management delivers bank performance (BP / RoA). The top 4 banks showed a far better bank performance (RoA above average Indonesia bank industry of 2.55%)

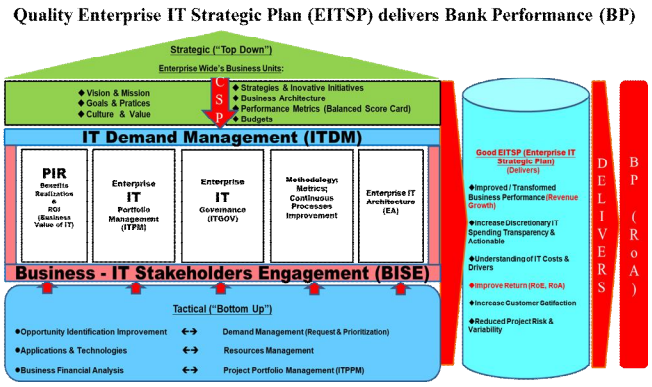


Figure 7: Quality Enterprise IT Strategic Plan (EITSP) delivers Indonesia Bank Performance (BP / RoA)

4.8 THE RESEARCH IMPLICATION

4.8.1 THE THEORITICAL IMPLICATION

1. In this research it is found that there is no significant statistic regression testing result supporting the 4 (four) hypothesis proposed (p value ≤ 0.05) although there are some positive coefficient relationship to Bank Performance) to deliver bank performance (BP / RoA). There might be due to the varies number from the top 20 banks, but not shown in the top 4 banks which show both EITSP, LC, LEC and ITIS correlated positively with the bank performance (RoA above Indonesia banking industry's average of 2.55%).
2. Good quality establishment processes of enterprise information technology strategic plan (EITSP) is necessary to have a balanced between business and IT needs through IT demand management coordination and integration effort composing corporate strategic plan (CSP) across bank wide (enterprise wide) business units to ensure their business IT solutions demands (needs), using enterprise architecture (EA) approach and IT portfolio management (ITPM) to ensure IT service delivery and support (supplies) needs to be agile and robust to support the business growth, while using IT project portfolio management techniques to decide the IT strategic investment spending priorities and communicate them through business IT stakeholder engagement (BISE) organization by practicing IT Governance and transparency (ITGOV) to ensure business value of IT (BVIT) is delivered measured by banks' RoA as explained in the Oxford Handbook of Banking 2010 (Berger, Molyneux, & Wilson, The Oxford Handbook

of Banking, 2010), and in the research results that the first 4 big banks' average RoA are higher than Indonesia banking average and their average quality of EITSP are also above the average quality of Indonesia banking of EITSP, there are also for LC, LEC and ITIS.

4.8.2 THE MANAGERIAL IMPLICATION

1. IT organizations and management have to change and improve their engagement approach in the organization in a better proactive discussions with their business partners as a team to establish a future agenda for information technology strategic investment projects spending. Both the supply side works in union with the demand side, this enables enhanced capacity planning of benefit to both sides. With proactive IT demand management (ITDM), many IT organizations will be able to get a step ahead of the business and build capability to enable new strategic business initiatives with shorter time to market to deliver business value of IT. This has been the prized but elusive goal of IT to become the business partner of internal organization enterprise wide business units. Then slowly and surely, in the organizations where IT is recognized for its strategic importance and/or IT processes have reached a very mature level of maturity. Managing IT demand has likely begun and the time to manage IT demand has arrived as described in the figure 7.
2. To practice a good IT demand management (ITDM), organizations need to build solid foundation (IT infrastructure and digitized business processes automating the company's core capabilities with ***three 3 key disciplines*** of 1. operating model, 2. Enterprise Architecture, and 3. IT engagement model. Enterprise will have higher profitability, faster time to market, and lower IT costs. These outcomes are universally beneficial and timeless as found in Ross, Weill & Robertson 2006 research. (Ross, Weill, & Robertson, 2006).
3. Then, it is important to communicate all the IT strategic investment projects spending to all organization units and the boards through a good practice of business IT stakeholder engagement (BISE) with a good practice of IT governance and transparency. The more clearly program objectives are defined and understood, the smaller the gap between delivered results and expected results. (Baugh, Stakeholder Engagement - The Game Changer For Program Management, 2015). And (Weill & Ross, 2004) a good IT Governance practice simultaneously empowers and controls, in Weill & Ross 2004 research found that top-performing enterprises generate returns on their IT investments up to 40 percent greater than their competitors.

5. CONCLUSIONS AND RECOMMENDATION

5.1 THE RESEARCH CONCLUSION

1. There is no significant statistic regression testing result supporting the 4 (four) hypothesis proposed (p value $\geq$ 0.05) although there are some positive coefficient relationship to Bank Performance) to deliver bank performance (BP / RoA). There might be due to the varies number from the top 20 banks, but not shown in the top 4 banks. In the top 4 banks, they showed a better quality processes of Enterprise Information Technology Plan establishment meaning involving all organizations units involvement as a team in the process through IT Demand Management coordination and integrating process i.e. Corporate Strategic Plan (CSP), IT Portfolio Management (ITPM), Enterprise Architecture (EA), Business IT Stakeholder Engagement (BISE), IT Governance & Transparency (ITGOV), and IT project Portfolio Management delivers bank performance (BP / RoA), especially the top 4 banks, they showed a far better bank performance (RoA above average Indonesia bank industry of 2.55%)

2. Good quality establishment processes of enterprise IT strategic plan (EITSP) is necessary to have a balanced between business and IT needs through IT demand management coordination and integration effort composing corporate strategic plan (CSP) across bank wide (enterprise wide) business units to ensure their business IT solutions demands (needs), using enterprise architecture (EA) approach and IT portfolio management (ITPM) to ensure IT service delivery and support (supplies) needs to be agile and robust to support the business growth, while using IT project portfolio management techniques to decide the IT strategic investment spending priorities and communicate them through business IT stakeholder engagement (BISE) organization by practicing IT Governance and transparency (ITGOV) to ensure business value of IT (BVIT) is delivered measured by banks' RoA as generally used by investors bank performance measurement as explained in the Oxford Handbook of Banking 2010 (Berger, Molyneux, & Wilson, The Oxford Handbook of Banking, 2010).

5.2 THE RECOMMENDATION

5.2.1 FOR REGULATOR

1. The good practice of central bank (Bank Indonesia) and OJK (Otoritas Jasa Keuangan / Financial Services Authority of Indonesia) regulation to regulate all Indonesia banks to submit their business plan annually (No. 12/21/PBI/2010) and together with their risk management implementation in the use of information technology (No. 9/15/PBI/2007) should be expanded to other industry like manufacturing, healthcare, etc. therefore they will not re-invent the wheel considering the time and the efforts that the Bank Indonesia and OJK have already spent (if not mistaken to my knowledge it takes more than 20 years (around 1985 – 2010) to come out with such regulation and best practice in the banking industry).

5.2.2 FOR INDUSTRY PRACTITIONER

1. Leaders in the banking industry sector have to leads and involves and contributes in the execution to set their new digital business strategy and to transform the organization to be digital capable organization to stay competitive in the era of digitalization and globalization to be agile.
2. Leaders in the IT organizations in the banking industry sector have to start doing implementing a good practice of IT demand management to balance and to cover both the supply and the demand side of IT in the organization to ensure the delivery of business value of IT strategic investment spent, as summarized and described in the figure 7.

5.2.3 FURTHER RESEARCH RECOMMENDATION

1. This research study should be expanded to other industry like manufacturing, service, healthcare industries etc. to help both leaders in the organization and the regulators to start practicing holistic / end to end IT management life cycle (E2E ITMLC) to balance and to cover both supply and demand sides of IT in the organization to ensure the business value of IT strategic Investment Spending delivered
2. This research study with time permitted can be drilled / dig deeper to expand the hypothesis / variables to understand better and deeper which variable amongst 7 variables (Corporate Strategic Plan - CSP, IT Portfolio Management - ITPM, Enterprise Architecture - EA, Business IT stakeholders engagement – BISE, IT Governance and transparency – ITGOV, IT Project Portfolio Management – ITPPM, IT demand management - ITDM) plays important role to the quality of enterprise IT strategic plan. And due to the digitalization and the globalization business dynamic, in the EITSP establishment processes it may add another variable to have a focus and dedicated business model innovation organization unit.
   And in the globalization and digitalization dynamic business era / environment, it should be a processes and ready and proper organization & staffing including the competence of the human capital to do and to institutionalize a business model innovation too to stay competitive in the market and agile.

REFERENCES

1. Akbarifar, I., & Hamdi, K. (February 2016). **IT Strategic Planning with the approach of Enterprise Architecture**. *International Journal of Humanities and Cutural Strudies ISSN 2356-5926*, 13.
2. Alex, M. K., & Ngaba, D. (09th June 2018). **Effect of Firm Size on Financial Performance on Banks: Case of Commercial Banks in Kenya.** *International Academic Journal of Economics and Fiannce*, 16.
3. Alonso, I. A. (2013). **Case Study of Strategic IT Demand Management in Organization - Exploratory Results.** *CENTERIS 2013 - Conference on Enterprise Information System*, 10. https://doi.org/10.1016/j.protcy.2013.12.100
4. Alonso, I. A., Verdun, J. C., & Caro, E. T. (2008). **The Importance of IT Strategic Demand Management in Achieving the Objectives of the Strategic Business Planning.** *2008 International Conference on Computer Science and Software Engineering*, 4.
5. Alonso, I. A., Verdun, J. C., & Caro, E. T. (2009). **IT, Senior Executives and Board of Directors Contribute to the Success of the Business: Implicates on the IT Demand Process - Life Cycle.** *2009 Fourth International Conference on Computer Sciences and Convergence Information Technology*, 9. https://doi.org/10.1109/ICCIT.2009.288
6. Alonso, I. A., Verdun, J. C., & Caro, E. T. (2010, November). **Enterprise Architecture Reponsibilities and People Roles.**
7. Alonso, I. A., Verdun, J. C., & Caro, E. T. (2016, May). **Description of the structure of the IT Demand Management Process Framework.** *International Journal of Information Management*.
8. Alonso, I. A., Verdun, J. C., & Tovar, E. (2008, January). **Project Prioritization as a Key Element in IT Strategic Demand Management.**
9. Alonso, I. A., Verdun, J. C., & Tovar, E. (2009, January). **Information Technology to Help Drive Business Innovation and Growth.**
10. Alonso, I. A., Verdun, J. C., & Tovar, E. (2010). **Bridging the gap between Technology and Business within Corporate Governance of Enterprise - Focus Areas of Special Attention in the Technology Domain.**

International Conference on Management Science and Information Engineering (ICMSIE), 7.

11. Alonso, I. A., Verdun, J. C., & Tovar, E. (2016, March). **Designing an IT Artifact: Framework for the Entire Process of IT Demand Management.** https://doi.org/10.1007/978-3-319-31232-3_30
12. Arasa, R., & Obonyo, P. K. (Nov 2012). **The Relationship between Strategic Planning and Firm Performance.** *International Journal of Humanities and Social Science Vol. 2 No. 22*.
13. Baugh, A. (2015). **Stakeholder Engagement - The Game Changer for Program Management.** Boca Raton, FL 33487-2742: CRC Press.
14. Beccalli, E. (2005). **Does IT investment improve bank performance? Evidence from Europe.** *the Wolpertinger 2005 Meeting, the European Accounting Association Conference 2005*, 40.
15. Berger, A. N., Molyneux, P., & Wilson, J. O. (2010). **The Oxford Handbook of Banking.** New York: Oxford University Press Inc.
16. Bonham, S. S. (2005). **IT Project Portfolio Management.** Boston: Artech House.
17. Brewster, E. (2014). **Business Relationship Manager.** Swindon, UK: BCS The Chartered Institue for IT.
18. Brynjofsson, E., & Hitt, L. M. (2000). **Beyond Computation: Information Technology, Organizational Transformation and Business Performance.** *Journal of Economic Perspectives, 14*, 49.
19. By, R. T. (2005). **Organisational Change Management: A Critical Review.** *Journal of Change Management*, 13.
20. Chen, Y., & Zhu, J. (2004). **Measuring Information Technology's Indirect Impact on Firm Performance.** *Information Technolgy and Management*, 14.
21. Cho, D.-S., & Moon, H.-C. (2000). **From Adam Smith To Michael Porter - Evolution of Competitiveness Theory.** Singapore: World Scientific. https://doi.org/10.1142/4531
22. David Consulting Group. (2007). **Measuring the Business Value of IT?**
23. Dess, G. G., & Davis, P. S. (1984). Porter's (1980) **Generic Strategies as Determinants of Strategic Group Membership and Organizational Performance.** *The Academy oif Management Journal*, 23.
24. Dess, G. G., McNamara, G., Eisner, A. B., & Lee, S. (. (2018 9th Ed.). **Strategic Management Text & Cases 9th Ed.** New York: Mc Graw Hill.
25. Fernandez, o. l., & Molina-Azrin, J. F. (2014 02nd May). **The Use of Mixed Methods in the field of behavioural sciences.** *Quality and Quantity (ResearchGate)*, 29.
26. Gates, L. P. (2010). **Strategic Planning with Critical Success Factors and Future Scenarios: An Integrated Strategic Planning Framework**. Carnegie Mellon University. Software Engineering Institute.
27. Gentle, M. (2007). **IT Success! Towards a New Model For Information Technology**. New Jersey: John Wiley & Sons.
28. Grembergen, W. V. (2004). **Strategies For Information Technology Governance.** Hershey, Belgium: Idea Group Publishing. https://doi.org/10.4018/978-1-59140-140-7
29. Gunawan, G. G. (2014). **Enterprise IT Solution in Indonesia - Business Opportunity for EU Companies.** (p. 16). Jakarta: Indoglobit.
30. Hardvard Business School Press. (1999). **Business Value of IT.** Boston, Massachusetts: Hardvard Business School Press.
31. Hooper, D., Coughlan, J., & Mullen, M. R. (2008). **Structural Equaiton Modelling: Gudelines for Determing Model Fit.** *The Electronic Journal of Business Research Methods*, 11 (53-60).
32. Kauffman, R. J., & Weill, P. (1989, July). **An Evaluative Framework For Research On The Performance Effects of Information Technology Investment.**
33. Keramati, A., Azadeh, A., Gohar, M. M., & Mofrad, M. A. (2012, April). **Investigating the effects of information technology investment on bank performance: Considering the role of environmental Dynamism and Strategy.** *International Journal of Applied Decision Sciencess*, 27.
34. King, B. (2012). **Bank 3.0.** Marshall Cavendish Business.
35. Lamoureux, L. (2017). **Doing Digital Right - How Companies Can Thrive in the Next Digital Era.**
36. Leckey, G. T., & Osei, K. A. (2010). **Investments in Information Technology and Bank Business Performance in Ghana.** *International Journal of Economics and Finance*, 10.
37. Lientz, B. P. (2010). **Breakthrough Strategic IT and Process Planning.** Singapore: World Scientific Publishing Co. Pte. Ltd.
38. Magretta, J. (2012). **Understandint Michael Porter - The Essential Guide to Competition and Strategy.** Boston, Massachusetts, USA.: Harvard Business Review Press.
39. Maizlish, B., & Handler, R. (2005). **IT Portfolio Management Step by Step - Unlocking the Business Value of Technology.** New Jersey: John Wiley & Sons, Inc.
40. McDermott, M. (n.d.). **What is Strategy? The Michael Porter Perspective.** (p. 41). Kentucky: NKU College of Business.
41. McGrath, J., & Bates, B. (2013). **Little Book of Big Management Theories.** Harlow: Pearson.
42. McKeen, J., Smith, H. A., & Gonzalez, P. (2012). **Managing IT Demand**. *Journal of Information Technology Management Volume XXIII, Number 2, 2012*, 12.
43. Miranda, R. H., Alonso, I. A., Procel, M. A., & Gomez, O. S. (January 2018). **Best Practices and Methodologies for IT Project Portfolio Management**.
44. Mooi, E. (March 2014). **Regression Analysis**. *ResearchGate*, 42.

45. Mooi, E., & Sarstedt, M. (2011). **A Concise Guide to Market Research - The Process, Data, and Methods Using IBM SPSS Statistics.** Verlag Berlin Heidelberg: Springer-Verlag Berlin Heidelberg.
46. Niemann, K. D. (2006). **Enterprise Architecture Management, IT Governance and Investment Planning.**
47. Porter, M. E. (1980). **Competitive Strategy Techniques for Analyzing Industries and Competitors**. New York: The Free Press.
48. Porter, M. E. (1985). **Competitive Advantage Creating and Sutaining Superior Performance.** New York: The Free Press.
49. Porter, M. E. (1991). **Towards A Dynamic Theory of Strategy.** *Strategic Management Journal*, *12*, 23.
50. PriceWaterhouse Cooper. (2017). **Indonesia Banking Survey 2017.** Jakarta, Indonesia: PwC.
51. Respati, H. (2008, October). **Pengendalian Teknologi Informasi Bank Pada Era Cyberbanking.** *Jurnal Ekonomi Modernisasi*, 9.
52. Romano, L., Grimaldi, R., & Colasuonno, F. S. (2016). **Demand Management as Critical Success Factor in Portfolio Management.** 12.
53. Ross, J. W., Weill, P., & Robertson, D. C. (2006). **Enterprise Architecture as Strategy - Creating a Foundation for Business Execution.** Boston, Massachusetts, U.S.A.: Hardvard Business School Press.
54. Schoonenboom, J., & Johnson, R. B. (2017 05th July). **How to construct a mixed method Research Design**. *Kolner Zeitschrift fur Soziologie und Sozialpsychologie*, 25.
55. Shi, N., & Silvius, G. (2011). **Enterprise IT Governance, Business Value and Performance Measurement.** https://doi.org/10.4018/978-1-60566-346-3
56. Simerson, B. K. (2011). **Strategic Planning - A Practical Guide To Strategy Formulaiton and Execution.** Santa Barbara, California: Praeger (An Imprint of ABC-CLIO, LLC).
57. Skinner, C. (2013). **Digital Bank - Strategies to succeed as a digital bank.** Kent, CT8 8BN: The Fianncial Services Club.
58. Tech Target Network. (2003). **IT Demand Management Key For Business Effectiveness.** Tech Target.
59. Venkatesh, V., Brown, S. A., & Bala, H. (2013). **Bridging The Qualitative-Quantitative Divide: Guidelines For Conducting Mixed Methods Research in Information Systems.** *MIS Quarterly*, 34. https://doi.org/10.25300/MISQ/2013/37.1.02
60. Verdun, J. C., Alonso, I. A., & Tovar, E. (2016, May). **Description of the structure of the IT Demand Management Process Framework.** *International Journal of Information management*, 14.
61. Weill, P., & Ross, J. W. (2004). **IT Governance.** Boston, Massachusetts: Hardvard Business School Press.
62. World Economic Forum in Collaboration with Accenture. (2016). **Digital Enterprise.** World Economic Forum.
63. World Economic Forum in collaboration with Accenture. (2016). **Digital Transformation Initiative (DTI)**. World Economic Forum.
64. Yuswohady, Fatahillah, F., Rachmaniar, A., Brillian, G., & Rachmat, Y. (2019). **Marketing Outlook 2020: The Fall and The Rise - It's Time to LEAP**. Jakarta: Inventure.