

# Alignment of Business Strategy, ICT Strategy and University Ranking

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**Abstract**— Senior leaders realize that intelligence, information and technology (IT) will radically and quickly change how “Organization of the Future” is done in the future. New sources and uses of enterprise data and information are brought together and analyzed in new ways to transform the foundation of how organizations will operate and create value for their stakeholders. The purpose of this study is to compare a Malaysia public university with an international university which is in the top 200 QS world ranking university in terms of the (a) supply and (b) demands for IT capabilities and solutions. Literature review on the information strategic plan (ISP) and corporate strategic plan (CSP) of these two universities based on the Business-IT Maturity Model was conducted. This journal highlighted the key findings to the university of the future which is the use and implementation of IT in every aspect of learning and teaching as well as research and innovation

**Index Terms**—About four key words or phrases in alphabetical order, separated by commas.

## I. INTRODUCTION

In order for organizations to be successful, Business Strategy, Organizational Strategy and IT strategy must be balanced and aligned properly as they are purposely designed to complement the business strategy. The term alignment means the situation in which organization’s current and emerging business strategy is enabled, supported, and unconstrained by technology through which the business strategy will drive the organization to meet its goal. Methodology is generally a guideline for solving a problem, with specific components such as phases, tasks, methods, techniques and tools. Generally, methodologies are comprised of the following four elements: providing an opinion of what needs to be solved, defining techniques on what has to be done and when to do it, advising on how to manage the quality of deliverables or products, as well as providing a toolkit to facilitate the process. The primary objective of the ISP-IPTA Methodology design was to document objectives and tasks in every phase, as well as the methods and techniques that can be used to implement the tasks.

As for universities in Malaysia, it is known that the methodology used is from MAMPU. The Malaysian Administrative, Modernization and Management Planning Unit (or MAMPU) is a government agency that is responsible for coordinating the development of ISPs at all Malaysian government agencies to ensure that they support the Malaysian Public Sector ICT Vision. The methodology enables government agencies to identify potential ICT

applications (in IS strategies) and potential technology infrastructure (in IT strategies) that are complemented with appropriate IS/IT management strategies.

In today’s world, IT plays an important role in business strategies. Enterprise-wide information systems, made possible by advanced and modern technology, can help organization adapt to the challenging, providing new forms of customer services, new distribution medium or channel and redefining organizational procedures and boundaries. To achieve this, organization should have a strong and well-developed strategic information system plan (ISP). An ISP consists of a strategy for both information planning and management, including the use of functions and features of IT (Galliers, 1995). With a proper strategic IT plan, organizations can use IT more competitively, identify new and higher payback IT applications, and better forecast IT resource requirements (Basu, 2002). For example, in university, in the context of teaching and research, IT can facilitate the process of creating, sharing and diffusing information in everyday life.

Strategic Information Systems Planning (ISP) is a continuous planning activity that ensures Information and Communication Technology (ICT) implementation in an organization is aligned with business strategies, improves organizational process effectiveness, creates business opportunities, and contributes to organizational competitiveness.

## II. PROBLEM STATEMENT

### Alignment of IT Strategic Plan and Business Strategic Plan

In the past, IT has only been merely an implementation tool and played a subservient role in business planning. However, as more and more new business opportunities are created through technology developments, IT has assumed a more pro-active role in shaping the business strategy of organizations (Beveridge, n.d.) It aids the organizations to perform their activities, functions accurately and properly (with the help of software), and supports decision making. IT can either be a tool for supporting or transforming organizations. Investing in IT is greatly expected to enable the business to reduce costs; increase revenue; standardize processes; enhance productivity; improve workflow and communications; sustain repeatable services levels; implement new business strategies; gain competitive advantage by harnessing on new technology

According to Affeldt and Vanti (as cited in Paula, Araujo, Tanaka, and Cappelli, 2015), IT strategic planning is defined as a set of devices for developing IT strategies, aiding to find the IT elements which permits assistance to corporate business. The tools and methods applied must be based on the IT user’s demands, thus the end-result for this process is an official plan corresponding to the organization’s business strategic plan. Therefore, it is important that we ensure that

the IT and business strategy plan are completely synchronized towards the similar business goals.

However, to align the business strategy plan and the IT strategy plan is not an easy feat. There are many difficulties in fully realizing it. One reason would be because the IT strategy is an afterthought, rather than being the organization's skeleton and backbone. This makes it more of a supporting role instead of carrying the organization to new heights.

Besides that, there are also few business-oriented IT strategies, most of them being completely focusing purely on technology products. This makes it more challenging to align IT and business strategies.

Hence, it is crucial to look beyond the conceptual level of most strategic thinking and produce a tangible plan that will bring a complete alignment between the IT and business strategy of an organization.

III. LITERATURE REVIEW

Each of organization has its own unique corporate strategic plan (CSP) as well as their Information System strategic plan. From the university that researcher found, each of the university have their own Strategic Planning to force the university a view of the future and provides some opportunity which can affect the future. It is also allocating a better awareness and necessity and the facilities of the university. The vision and mission also differ between the Universities. The university has their own priorities so they can span their core strategies and open the potential for new and enhance activity on the part of staff, students, departments, and colleges.

Meanwhile, the Information System Strategic Plan (ISP) needs to be aligned with CSP. ISP is an important activity to support the corporate strategy of the university. This ISP is to identify strategic applications and to align with the business strategy of the organization. The vision and mission of university to be an innovation ICT center to support research, teaching and learning by providing innovative technology. The example of CSP and ISP from local university and top 200 QS ranking are as tabulated in Table 1.

LOCAL UNIVERSITY	
CORPORATE STRATEGIC PLAN (CSP)	INFORMATION SYSTEM STRATEGIC PLAN (ISP)
1. Teaching and learning	1. Developing infrastructure and ICT services
2. Excellent research.	2. Empowering ICT to develop knowledgeable community
3. Faculty and staff recruitment, development and reward	3. ICT service innovation
4. Globalisation	4. Applying green ICT culture among citizens of the university
5. Infrastructure planning, development and review	5. Build sophisticated neighborhood of ICT around campus
6. Leadership, culture and image	
7. Financial sustainability	

TOP 200 QS RANKING UNIVERSITY	
CORPORATE STRATEGIC PLAN (CSP)	INFORMATION SYSTEM STRATEGIC PLAN (ISP)
1. Research	1. Research
2. Education.	2. Education
3. Widening engagement.	3. Widening engagement
4. Personnel	4. Enterprise administrative
5. Finance, capital, and value for money	5. Infrastructure
6. Estates.	6. Cybersecurity
7. IT infrastructure	7. IT Service excellence
8. Alumni relations and development	8. IT Staff and skills

Table 1: The Comparison of CSP and ISP Between Local University and Top 200 QS Ranking University

The comparison showed the uniqueness of CSP and ISP of the universities. Researchers found that there are differences between CSP and ISP for both universities. From researcher's point of view, the CSP and ISP for Top 200 QS Ranking Universities has a similarity between their Strategic Plan. The CSP and ISP align to each other. Compare to Local University, the CSP and ISP are not quite like each other. Based on figure 1, researchers have made a comparison on alignment of CSP and ISP for both universities.

Successful firms have an overriding business strategy that drives ISP. ISP can itself affect and is affected by changing of CSP. Alignment of CSP and ISP is a need to ensure the organizational goal being achieved. From the figure 1, Top 200 QS ranking university has around 87 percent out 100 the CSP and ISP align to each other, meanwhile local university has 45 percent of alignment CSP and ISP. This shows that Top 200 QS ranking university has a successful business strategy compare to local university. The objectives of this study to know what are the CSP and ISP of the universities, is the CSP and ISP align to each other and strengths of both universities.

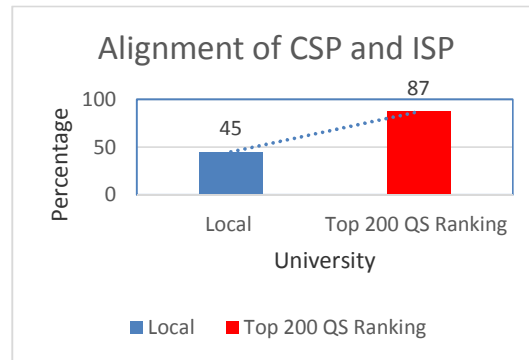


Figure 1: Alignment of CSP and ISP for both universities

IV. BUSINESS-IT MATURITY MODEL

Researchers thought that one way to ensure that a university’s corporate and IT strategic plan is aligned is to observe it through the Business-IT Maturity Model. The model which was invented by Vaughan Merlyn and a team of researchers helps address the maturity and trajectory of both a business’s demand for IT and the IT supply to satisfy the business’s demand. By doing so, the model reveals patterns of relationships and disassociations between the demand and supply.

In its simplest form, the BIMM is an S-shaped learning curve – the business learning to exploit technology and the IT organization learning to become efficient and effective in delivering IT services and shaping business demands. The Business-IT Maturity Model’s simple appeal helps business executives to easily grasp the concepts behind business demand maturity for IT. This allows them communicate with IT leadership about the business implications of both demand and supply maturity. Figure 2 depicts the basic three-level Business-IT Maturity Model.

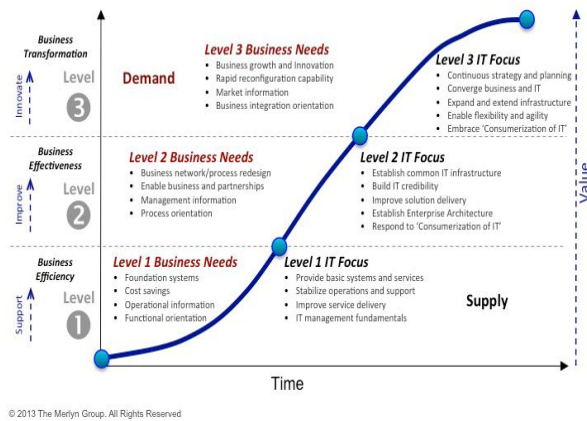


Figure 2: Business-IT Maturity Model

At level 1, business demand is more towards efficiency. The demand in Level 1 begins independently in many business units and functions, operating as ‘silos’. It primarily is about transaction automation (e.g., replacing manual course registration with an online course registration system) to save costs. Since Level 1 demands originate within business silos, the focus is limited to those silos (e.g., sales, services, finance, research & development) and is often restricted by departments (department of finance, department of student affairs, etc.)

IT supply Level 1 focus on basic transaction processing (Fees processing, staff payroll) and basic IT services (desktop computing, Wi-Fi, and helpdesk.) Since information systems are built for functional silos, a lot needs to be done by the application and database interfaces to help connect between different departments and make useful operational information available. The IT goal is to provide stable, reliable computing operations and business support.

At Level 2, the business demand moves from finding business efficiency to business effectiveness. It seeks to become more cross-functional rather than stay silo like in Level 1. Achieving business effectiveness requires functional silos to work together to do end-to-end processes (e.g., hostel registration to hostel check-out). Therefore, the demand here has more to do with business integration rather than simple functional performance. In the context of a university, an

integration that extends beyond a single department’s boundaries, relying on information exchange and closer operating coordination with other departments.

IT supply at Level 2 focuses on enterprise systems. This level focuses on the services to enable and support the effective use of enterprise systems with aid from capabilities such as Data Warehousing and Business Analytics. A key activity at Level 2 is building common infrastructures (hardware, software, databases and data warehouses, information management tools) thereby reducing redundancy, reliance on custom interfaces, and lowering IT cost. IT’s automation goals shift from basic transaction processes to business process improvement. Meaning that IT is changing from technical to business process orientation, with business analysis and relationship management as the main direction.

At Level 3, demands of a business shifts from effectiveness to innovation and growth. The need for information expands to include business and market intelligence, by means of more extensive data and detailed analytics. Business requires IT to become more agile. To connect with a fast-changing ecosystem and seize opportunities, a business must have all its assets such as talent, processes, and technology structured and managed in a way that makes it flexible, adaptable and balance.

IT supply at Level 3 focuses on strategic and technology-driven business capabilities. This means that information and technology are to be leveraged to create presence in the market. The business infrastructure evolves to become more agile, with standard interfaces and capabilities opened to business partners. IT services and capabilities are sourced wherever the best performance is. The stress is on flexibility (e.g., Platform as a Service, Infrastructure as a Service) to assist fast creation, scaling and termination of services. IT goals expand to optimize the value of information, technology, and technology-based initiatives for the business.

V. FINDINGS

Based on researcher’s findings, researchers have pointed out strengths of the ISP of the universities. This strength show the uniqueness of their ISP and may differ to other organizations. The result of this findings based on the criteria of Figure 2. The strengths of both universities are shown as tabulated in table 2.

Strengths of ISP	
Local University	Top 200 QS Ranking University
<p><b>Applying green ICT culture</b> Malaysian Administrative Modernisation and Management Planning Unit (MAMPU) has issued guidelines for the use of ICT Towards Green ICT culture. Some <i>green efforts</i> have been implemented successfully such as the use of e-mail as a</p>	<p><b>Widening engagement, not only around campus, but also around the city.</b> A major aspect of the strategy is delivered through a stronger digital presence, collaborative working with local authorities, industry and charities, including the Oxford University Hospital Trusts, Harwell Oxford, Begbroke Science Park and Isis Innovation.</p>

<p>communication medium that is efficient, fast and saves paper and the use of network printers to limit the use of paper for critical purposes only while optimizing toner. By adopting a Green ICT Culture local university citizens can apply best practices in the use of ICT services and hardware</p>	<p>The IT strategic plan delivers the infrastructure and common toolset to facilitate widening engagement of the global research and teaching community, the public and local community.</p>
<p><b>Promote the use of Executive Information System (EIS)</b> The use of Executive Information System in this university is: Identifying the needs of local university Identifying needs of Data Warehouse Identifying the equipment of EIS Implementing <i>Data Mart</i> Implementing <i>Data Model</i> Implementing <i>EIS</i></p>	<p><b>Collaboration and partnership are the central to the strategy</b> Teaching, research and administrative staff work in partnership with IT providers to ensure that IT delivery works as a strategic enabler for the University. This can only be achieved through a deep understanding of the University functions that might benefit from technology, and therefore it requires the close collaboration of staff and students, subject matter experts, and IT specialists.</p>
<p><b>Implementation of BYOD</b> It is to give empower to consumers for digital asset ownership through BYOD approach. Implementing BYOD by providing allowances for staff to buy their own computer in the office.</p>	<p><b>ISP is very detailed and more expanding scope</b> Comparing to local university, International ISP is more detailed. The explanation of each point is more specify. It contain more futuristic elements.</p>
<p><b>Develop knowledgeable community</b> 'Knowledge is a king' is a phrase commonly accepted wisdom. Knowledge management system used to manage journals, publications and other information are available at the University. For the purpose of sharing knowledge, local university currently uses MS Share Point platform and Google Drive. In addition, the knowledgeable staff can collaborate and share</p>	<p><b>The CSP and ISP have their own priority.</b> In the international university's CSP and ISP, the priorities traverse core strategies and open up the potential for new and enhanced activity on the part of staff and students, departments and colleges.</p>

documents with ease using both systems.	
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Table 2: Strengths of ISP for both universities

From Table 2, the strengths of ISP for both universities are unique to each other. In comparison, the strengths of ISP of the local university focus on how to develop IT Infrastructure which benefits to the university community. However, for the top 200 QS ranking university, they focus on how to propel their university into the "University of the Future". They want to widen the engagement not for university, but also around the university which involve the people living near to the university area. This shows that the top 200 QS ranking university has more advanced ISP compare to local university.

The Table 3, 4, 5, and 6 below show the Business Demand and IT Focus for each level and for each of the university which are based on the Business-IT Maturity Model.

Malaysian Public University	
<b>Level 1 – Business Demand (Support)</b>	
1. Foundation systems	Yes
2. Cost savings	Yes
3. Operational information	Yes
4. Functional orientation	Yes
<b>Level 2 – Business Demand (Improve)</b>	
1. Enable business and partnerships	Yes
2. Enable collaboration	Yes
3. Consolidated management information	Yes
4. Integrated process orientation	Yes
<b>Level 3 – Business Demand (Innovate)</b>	
1. Inter-enterprise systems/infrastructure	Yes
2. Business growth thru innovation & differentiation	No
3. Flexible, agile business capabilities	No
4. Business Intelligence	Yes

Table 3: Business Demand of Malaysian Public University

Malaysian Public University	
<b>Level 1 – IT Supply (Support)</b>	
1. Provide basic services & systems	Yes
2. Stabilize IT operations & support	Yes
3. Improve business processes	Yes
4. Closed internal communications networks	Yes
<b>Level 2 – IT Supply (Improve)</b>	
1. Establish common infrastructure for operations, business processes and collaboration	Yes
2. Deliver on time, on budget	No
3. Build credibility	Yes
4. Improve service / solution delivery	No
5. Internal networks + Internet	Yes
<b>Level 3 – IT Supply (Innovate)</b>	
1. Open platform for innovation	No
2. Converge business and IT functions	No
3. Enable flexibility & agility	No
4. Value realization	No

Table 4: IT Supply of Malaysian Public University

Top 200 QS World Ranking University	
<b>Level 1 – Business Demand (Support)</b>	
1. Foundation systems	Yes

2. Cost savings	Yes
3. Operational information	Yes
4. Functional orientation	Yes
<b>Level 2 – Business Demand (Improve)</b>	
1. Enable business and partnerships	Yes
2. Enable collaboration	Yes
3. Consolidated management information	Yes
4. Integrated process orientation	Yes
<b>Level 3 – Business Demand (Innovate)</b>	
1. Inter-enterprise systems/infrastructure	Yes
2. Business growth thru innovation & differentiation	Yes
3. Flexible, agile business capabilities	Yes
4. Business Intelligence	Yes

Table 5: Business Demand of a Top 200 QS World Ranking University

Top 200 QS World Ranking University	
<b>Level 1 – IT Supply (Support)</b>	
1. Provide basic services & systems	Yes
2. Stabilize IT operations & support	Yes
3. Improve business processes	Yes
4. Closed internal communications networks	Yes
<b>Level 2 – IT Supply (Improve)</b>	
1. Establish common infrastructure for operations, business processes and collaboration	Yes
2. Deliver on time, on budget	Yes
3. Build credibility	Yes
4. Improve service / solution delivery	Yes
5. Internal networks + Internet	Yes
<b>Level 3 – IT Supply (Innovate)</b>	
1. Open platform for innovation	Yes
2. Converge business and IT functions	Yes
3. Enable flexibility & agility	Yes
4. Value realization	Yes

Table 6: It Supply of a Top 200 QS World Ranking University

### CONCLUSION

Achieving and sustaining IT-business strategic planning continues to be a major issue. The technology and business environment is too dynamic making full alignment an almost impossible feat.

The Business-IT Maturity Model provides executives with a view that can make them easily understand the business value of IT and what it takes to realize that value. The careful assessment of a university’s alignment maturity is an important step in identifying the specific actions necessary to ensure IT is used to appropriately drive a business strategy

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