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**CHALLENGES FOR MANAGING NON-TECHNOLOGICAL
INNOVATION: A CASE FROM MALAYSIAN PUBLIC SECTOR**

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Abstract: The Malaysian government has encouraged public sectors to adopt innovation to create value added that will increase their wealth creation and to enhance their competitive advantage. There are many initiatives have been put forward to encourage the innovative activities, nonetheless, the efforts are rather less fruitful. Thus, this paper aims to discuss the challenges faced in managing non-technological innovation in the organization and suggest ways for improvement particularly in Malaysian public sectors. For that purpose, seven interviewees have been chosen to be interviewed using semi-structured questions from two categories; facilitator and implementer. Thematic approach is implemented to analyse the data collected. This study has identified three critical challenges, which include innovative culture, inadequate resources and lack of collaboration with other institutions.

Key words: innovative culture, resources, collaboration, non-technological innovation

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Introduction

Recently, the government has started an enforcement to transform the public sector into more innovative ways due to current expectation and demands from the stakeholder¹. The serious efforts can be seen from the Malaysian policies and guidelines such as the Eleventh Malaysia Plan (2015-2020), the National Policy on Science, Technology and Innovation (NPSTI), the Transformation Plan, New Economic Model (NEM) and the Guidelines to Cultivate and Empower Innovation in Public Sector through Kumpulan Inovatif dan Kreatif (KIK) Horizon Baru. All of these policies are emphasized on the creation, development and implementation¹⁰ innovation in improving the service delivery process particularly in the public sectors. In order to sustain the development of nation and economic structure and to maintain the competitive advantage, public sector is required to redesign and restructure their current systems and processes through innovation (Ali and Buang, 2016).¹⁴

Innovation in public sector is defined as a process of creating, developing and implementing ideas to fulfil the public needs and demands (Mulgan, 2014). It is perceived as a problem solving in dealing with the societal challenges and improving the quality of public services. It also has large influence on people's

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lives, industrial development and economic (Alsos et al., 2015). In order to fully benefit from the implementation of innovation, public sector is required to manage their innovation strategically. Management innovation is the introduction of management practices that is new to the firm and predetermined to improve the organization performances (Mol and Birkinshaw, 2009). It is also perceived as the development of new design, new policy and new operating procedures that address the public policy problems (Cohen, 2008). A good strategic management of innovation enables public sector to improve their level of accountability and transparency, the user involvement and satisfaction level, and new forms of management that improve their performance (Leon et al., 2012).

Public sector has implemented innovation in their organisation in order to respond to the changing environment and the demand from the community effectively (De Vries et al., 2014). Innovation in public sector is defined as the creation and implementation of new processes, products, services and methods of delivery that will create improvements in the efficiency, effectiveness or quality of outcomes (Mulgan, 2014). There are two types of innovation can be applied by the organization; technological and non-technological innovation. Non-technological innovation is complement to technological innovation (Pereira, 2013) because the organization not only used it to develop and apply new technologies but also to adopt and reorganize the business management part as it affects the organization's management systems.

There are various management innovation frameworks have been introduced by previous scholars such as integrated model of innovation management by Seido Nagano et al. (2014) or Kovács and Kot, (2017) and factors of innovation pyramid by Smith et al. (2008). However, it is found to be less relevant with the current application and situation. This is due to the changing challenges rise from the tight budgets, higher expectation from the public, demands in service delivery performance, and growing complexities. Therefore, this paper discusses three critical challenges that affect the management innovation and suggest improvements to assist the Malaysian public sector to effectively, manage the non-technological innovation. This paper aims to answer two research objectives:

- 1) to examine challenges in managing innovation in the Malaysian public sectors,
- 2) to suggest ways of improvement for effectively managing innovation in the Malaysian public sectors.

Methodology

This paper employs qualitative method to collect data as it provides in-depth information of the situation and interprets people's understanding and experience where people are being studied (Bryman, 2008; Ormston et al., 2013). Besides that, this method provides a set of interpretive practices, such as interviews. Semi-structured interviews with seven interviewees were conducted. Two types of respondent were chosen such as the facilitator and the implementer and three criteria was used to identify the suitable respondents; (1) perceived high knowledge

in managing innovation in public sector; (2) involved in managing innovation at the public sector; (3) and experienced in innovation competitions and won innovative awards locally and internationally. All seven interviewees are identified as QA, QB, QC, QD, QE, QF and QG.

Tape recordings were used during interview and later the data were transcribed verbatim. Each interview lasted for approximately one to two hours. The data then were analysed using thematic approach and three critical challenges were emerged based on the interviewees responds, which include; innovative culture; lack of collaboration with other institution; and inadequate resources.

Results and Discussions

In achieving the objective of becoming developed nation by 2020, Malaysia government is required to fulfil the demands from the global and public. This includes better improvements regarding the accessibility, responsiveness and speed of public services (Ali and Buang, 2016). Public sector should be compatible and flexible in tackling any challenges arise due to globalization. This includes, inappropriate of leadership styles, less innovative culture, inadequate resources and incompetent collaboration with other institution (Daglio et al., 2014; De Vries et al., 2015; and Alsos et al., 2015).

One of the challenges is innovative culture. Culture has been categorized as one of the critical elements in managing innovation (Cohn, 2013). It can determine when, how and in what form of innovation that will be adopted, which contributes greater innovation capacities to societies that have been characterized by individualism, readiness to accept change, willingness to take risks, and openness to new information (Bunchmann, 2012). In order to understand how management innovation is being shaped, they can see it through the implementation of organizational culture (Birkinshaw et al., 2008).

Second challenges mentioned by the respondent are inadequate resources. Resources are recognized as one of challenges that influence an organization's ability to manage innovation, which comprises of human, financial, physical, and social capital (Smith et al., 2008; Kowang et al., 2015). Lacking of adequate resources will inhibit the innovation success. Moreover, collaboration between other corporate organizations, institutions, or agents is also listed as one of the challenges in managing innovation.

Collaboration can enhance the possibility of accessing complementary resources that contributes to the development of innovation activities performance (Sanchez-Gonzalez, 2013). An organization can share their knowledge and resources to produce generation and application of new ideas for products, processes or services, which creates opportunities to enter new markets (Sanchez-Gonzalez, 2013). They also share resources that will give added values to the products or services provided.

Table 1. Summary of Results

Respondent	PA	PB	PC	PD	PE	PF	PG	
Innovation Culture	√	√	√	√	√	√	√	7/7
Lack of Collaboration with other Institution	√	√		√	√	√	√	6/7
Inadequate Resources	√			√	√	√	√	5/7

Innovative Culture

Right communication system is a vital in delivering right information as sometimes; the information delivered can be misunderstood. Therefore, to cultivate innovation and motivate the employees to innovate, the public sector is encouraged to communicate proactively at all levels and departments. As mentioned by respondent PC, *"We also communicate with other employees from different levels and departments about innovation, so that they are influenced to involve in innovation. Furthermore, we encouraged them to discuss about innovation during department meeting and include topics on innovation in minutes of the meeting"*.

It is interesting to note that to innovate big idea is not enough; employees should work hard to communicate the innovation effectively in enculturating innovative minds among employees. Respondent PC indicates that one of the ways that can be used by other public sectors is to continuously discuss about innovation on every meeting, so that it can be a reminder for the departments and employees on the importance to innovate. This is to ensure the innovation activities can be reinforced and perceived as one of the innovative cultures. Although innovative culture might not fully be implemented in the public sector, communication through certain channels among members in the organization is recommended as it helps in the diffusion of an innovation (De Vries et al., 2014).

By developing a real understanding of needs and wants from the customer, the public sector will be able to provide services to best respond to the needs and wants. As stated by respondent PA, *"leader should build an engagement with the outside people. We need to have two ways of communication between people outside and inside the organization, so that we understand more about their needs and wants"*.

The understanding of public's demand can be found through two types of engagement, which are the engagement with people inside of the organization and the outsiders. Engagement with people inside of organization will enhance the productivity performance as the employees feel motivated and responsible in doing the best they can to ensure the organization success. Without this engagement, the organization may deal with difficulties in achieving its organizational goal. While, the engagement with outsiders will provide a broader view of the current situation, which gives them a new perspective to solve problem that arises in the organization, yet this engagement may lead to misunderstanding due to the differing cultures.

This study has emphasized that effective communication system is important in an organization with diversity of languages, cultural and levels. It helps to enhance the organization's productivity, increases better and smooth operations activities and minimizes errors. Employees also will experience an increase in productivity, morale and commitment if they are able to communicate from up and down in communication chain in the public sector. Moreover, organizations should also practice fair and open communication among members at all levels in order to deliver right information at the right time.

Collaboration with other Institution

Collaborations can be created through cross-sectors involving private sector and the public (Baig et al., 2014). It is believed that collaborations may increase the innovativeness of public service delivery with high speed and accuracy. Respondent PA revealed that, *"if all agencies can cooperate to collaborate to solve problems and innovate, most of problems and complaints will be decreased"*.

Public sector, especially the local authority, receives complaints from the public about the services, facilities and others. Sometimes the complaints involve many public sectors; hence, collaborations among these public sectors are required to solve the issues. They can exchange ideas or share resources needed in solving the problems. Without understanding and cooperation, they would not be able to reach a consensus.

Collaborations also may enhance the individual skills and knowledge, as they are able to work and learn from new sets of individual, with a different skills sets and background. As stated by respondent PB, *"Besides that, if the team do not have certain knowledge that is needed, they will consult expertise from other departments. They also can assign facilitator for that group to assist or they can refer their inside expertise to help them as advisor. However, the team can also collaborate with the outsider; this is what we called as social innovation"*.

Innovation requires various skills and expertise as it involves a long process from the development until commercialization and marketing. People who are experts in certain areas will make the project run smoothly and able to achieve the goals efficiently. Although there could be diverse background among members in a team, but they still have problems in terms of lack of facilities or knowledge. Therefore, a social innovation is encouraged through collaborations between same sector and different sectors. Through social innovation, the organization is also able to overcome certain issues, such as insufficient human resource. Most of the teams or organizations do not have all expertise in all areas causing them to collaborate with the experts from outside or from other groups and utilize their knowledge to solve problems.

On the other hand, funding issue can also be minimized through collaboration. This is mentioned by respondent PA, *"like now, most of public sector said that they did not have enough money to innovate, so they should be more creative and innovative to generate income. They can collaborate with other agencies"*

to overcome financial issues and other issues. Share the cost especially in developing new products". Respondent PC also agreed and indicated that, "now, the government would go for low cost and have a great impact project. But we need to evaluate again as not all public sector have budget allocation and some of them need collaboration to generate fund".

If the public sector collaborates with the private sector, they can share the cost of innovation between two parties because the private sector has stronger funding as compared to the public sector as they have a business model that helps them generate their income. If we make a comparison between hiring expertise and collaboration, collaboration is cheaper but it is not always as easy as mentioned, as there are challenges to be faced by the organization. This includes the leadership and authority issues. In a long-term partnership, organizations should clearly define the boundaries in terms of responsibilities and roles as the innovation product may be at risk for not being perceived positively. A successful collaboration will raise support, need for creating solution and possessed the innovation resources to implement the solution. It also enhances the employees' capability to grow beyond their comfort zone and contribute any innovative ideas for better performance. Figure 1 summarizes the importance of collaborations in managing innovation.

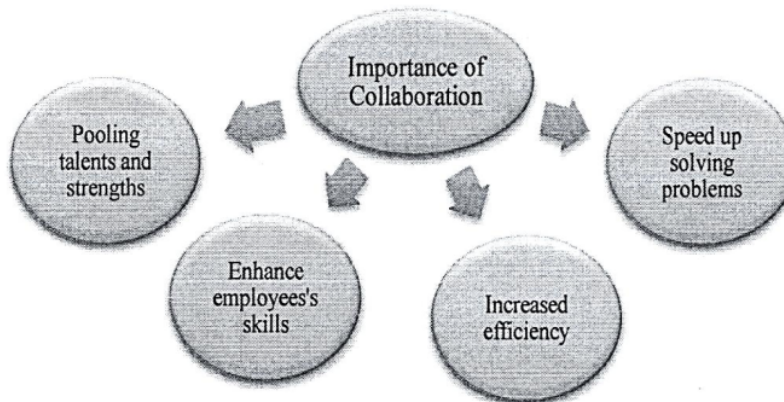


Figure 1. The Importance of Collaborations in Managing Innovation

Inadequate Resources

Adequate resources are vital in achieving a successful innovation and sustain the competitive advantage. Resources are recognized as one of the factors that influence an organization's ability to manage innovation, which comprises of human, financial, physical, and social capital (Smith et al., 2008; Kowang et al., 2015). Lacking sufficient resources will inhibit the innovation success. This study

identifies two organizational resources that affect the management innovation in public sector, financial resources and human resources.

Innovation requires high fund allocation as commercialization process and filling an intellectual property rights cost is expensive. This is proven by respondent PC, *“For an organization to undertake commercialization, MyIPO for patent and etc., all of this takes time and years. We have the idea and product but because of patent and commercialization process, cost became higher than the product itself. We should have funding for innovation however public sector did not have allocation for innovation”*.

It is commonly known that funding for innovation in the public sector is tied to the department's budget; in many instances, funding from the outsiders depends on the availability of funding and risk of failure. Respondent PG mentioned that the government has provided a grant for commercialization, if the public sector is committed to commercializing their products, the government will help and assist any agencies that are interested to take their product further. Moreover, the government has also introduced the Kumpulan Inovatif dan Kreatif (KIK) Hybrid, initiatives of collaboration to share resources towards development of innovation.

Respondent PF mentioned that, *“We know the government may not be able to provide money for innovation that is why we stressed the introduction of Kumpulan Inovatif dan Kreatif (KIK) Hybrid because we can collaborate and shared the cost for innovation with the collaborator. In technical part, if we really follow the whole process, the prototype must be saleable and marketable”*.

The Kumpulan Inovatif dan Kreatif (KIK) Hybrid is one of the new initiatives introduced by the government to promote collaborations. The implementation of Kumpulan Inovatif dan Kreatif (KIK) Hybrid is believed to help the public sector reduce the financial issues and other issues that arise through capitalizing on local authorities to improve quality services.

Second resources vital in the process of managing innovation is the human resources. In the Eleventh Malaysia Plan (2016 – 2020), the government has listed human capital as one of the strategic thrusts to be focused. The strategic thrust mentioned is accelerating human capital development for an advanced nation. Human resource is recognized as one of the major sources of a competitive advantage and their capability has been widely reviewed in the study of sources of competitive advantage (Breznik et al., 2016). It is also essential in creating and developing innovation because it helps the organizations through their expertise, knowledge, and energy. This is shown by respondent PA where she admitted that human expertise is important in driving the innovation as it could transform the knowledge into social action, *“one more is human competencies. I saw that if we want to drive the innovation, we need people to innovate and their expertise. If we do not have the knowledge, we cannot innovate. So, I think the human capital and competencies are vital, they do not necessarily have master, degree or high education because the experience they gain from the working which is helpful knowledge”*.

The statements above are also accepted by respondent PD, *“in Innovation Action Plan, we emphasize the importance of human resource. Let say you have a product but you do not know how to sell and promote the product. So, we have two groups that will assist in terms of technical or management. For technical part, we have manpower from various disciplinary such as people from the engineering, landscape, etc. These technical people will help to develop the product innovatively”*.

An organization should know how to use human competencies optimally. An organization with a high level of human resource may achieve positive outcomes of higher innovation. While, an organization with lower human resource will face difficulties to innovate as they are probably far from the technological frontier. Without adequate experts, they are unable to increase the incentives to innovate and sustain the innovation.

In addition, respondent PF added that the sustainability of human resource could also affect the management innovation, *“another challenge in public sector is the commitment from the employees. The diplomatic and administrative officer position is usually repositioned, so, when the officer kept changing, the sustainability issue emerges especially during the implementation of innovation. If the human resource itself are keep changing, it will become hard to sustain an innovation as we have to train new people and the expertise in the group may be decreased [...] this may lead to a poor commitment from the group and sometimes the group will be dismissed”*.

Innovation will only be successful in a long term if the organization is able to manage human resource and sustain their competency. Organizations also should be able to align human resource management into strategic direction that allows the organization to achieve its goals. This is confirmed by Rosli et al. (2015) that Malaysian local government has faced a lot of complaints on inefficiency and ineffectiveness its operation due to limited number of human resource. Therefore, this study indicates that the public sector needs to develop a strategic plan in managing their human resources and prevent from losing vital sources of innovation. The strategic plan may include how they allocate and use their resources optimally.

Conclusion

In order to foster innovation, public sector is required to create and implement a strong innovative culture, develop collaboration with other institution and sustain adequate resources in promoting innovativeness. This critical challenge is important to determine as it will assist the public sector to develop new strategies in improving their service delivery to be more effective and efficient, increase their productivity, and thus enhance the competitive advantage.

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WYZWANIA DOTYCZĄCE ZARZĄDZANIA POZATECHNOLOGICZNYMI INNOWACJAMI: PRZYPADEK MALEZYJSKIEGO SEKTORA PUBLICZNEGO

Streszczenie: Rząd Malezji zachęcał sektory publiczne do przyjmowania innowacji w celu tworzenia wartości dodanej, która zwiększy ich dobrobyt i wzmocni przewagę konkurencyjną. Podjęto wiele inicjatyw zachęcających do innowacyjnych działań, jednak uzyskane wyniki nie są najlepsze. Niniejszy artykuł ma na celu omówienie wyzwań stojących przed zarządzaniem pozatechnologicznymi innowacjami w organizacji oraz zaproponowanie sposobów na poprawę aktualnego stanu, szczególnie w malezyjskich sektorach publicznych. W tym celu wybrano siedem osób, z którymi przeprowadzono wywiady, z wykorzystaniem półstrukturalnych pytań z dwóch kategorii; moderator i realizator. W celu analizy zebranych danych wdrożono podejście tematyczne. W badaniu wskazano trzy kluczowe wyzwania, które obejmują innowacyjną kulturę, nieodpowiednie zasoby oraz brak współpracy z innymi instytucjami.

Słowa kluczowe: Kultura innowacyjna, odpowiednie zasoby, współpraca, pozatechnologiczne innowacje

管理非技术创新的挑战：来自马来西亚公共部门的案例

摘要：马来西亚政府鼓励公共部门采取创新措施，创造附加价值，增加财富创造，增强竞争优势。已经提出了许多倡议来鼓励创新活动，但是，这些努力的效果相对较差。因此，本文旨在讨论管理组织中非技术创新所面临的挑战，并提出改进方法，特别是在马来西亚公共部门。为此，有七位受访者被选为使用两类半结构化问题进行访谈；促进者和实施者。采用主题方法分析收集到的数据。这项研究确定了三个关键挑战，其中包括创新文化，资源不足以及与其他机构缺乏合作。

关键词：创新文化，充足资源，协作，非技术创新

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