Competitive Intelligence Deployment Framework for Business Enhancement

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Abstract. *Organisations employ different strategic tools such as Competitive Intelligence (CI) to enable and support their goals and objectives. Competitive Intelligence is a process which is automated by information systems primarily to carry out tasks and activities within the context of the organisation that deploys it. The CI is deployed by many organisations mainly to collect and analyse relevant data for decision making and competitive advantage. CI products are deployed in various ways in different contexts. CI products differ in many ways such as in terms of compatibility and the functionalities that they offer.*

The functions of a CI product are considered to be of significant to the organisation that deploys it. Otherwise, it would be short of enabling and supporting its objectives. The compatibility is critical mainly because each environment is unique. Many organisations have acquired CI products which they could not use because of compatibility challenges they encountered during implementation. This is one of the reasons why the criteria for selection and deployment of CI products are very important in many organisations.

Keywords: Information Systems, Competitive Intelligence, Business, Enhancement

1. INTRODUCTION

Competitive Intelligence (CI) is an information system which many organisations make use of to determine their competitiveness. CI is a system that performs various functions such as management and dissemination of information; and collection and analysing of data. Van Brakel (2005:1) defines Competitive Intelligence as, "a business discipline that is used by companies and countries alike as a means to improve competitiveness by making better use of information".

CI as a system, is often used by some organisations as a decision making tool in their businesses. Guimaraes (2000) argues that an organisation can improve its competitive edge and its overall performance by applying an effective CI programme. According to Brouard (2006) organisations should scan the environment in which they operate to ensure that they are ahead of the changes that are happening in their industry, and they are aware of what their competitors are doing in order for them to react quickly if and when necessary.

Primarily, organisations make use of CI products to improve their competitiveness. According to Dou et al. (2005: 209) some CI products make use of patents in their design and development. Xu et al. (2011) argue that it is imperative for organisations to ensure that they identify possible risk that they may be faced with pertaining to products as well as any plans that their competitors may have. Viviers and Muller (2004) posit that organisations use CI to enhance their competitiveness and that it is regarded as a legitimate business activity.

Due to factors such as rapid change in business requirements, as well as increasing competition amongst organisations, there is more demand for CI products. According to McGonagle and Vella (2004), CI is becoming more and more vital to firm's survival in today's dynamic markets. Myburgh (2004) stated that the objectives of CI are to manage and reduce risk, make knowledge profitable, avoid information overload, ensure privacy and security of information, and use corporate information strategically.

Information Systems such as CI is intended to bridge the gap between business initiatives. It is implemented mainly to assist organisations in improving their effectiveness and efficiency. There are a number of CI products that are currently deployed by organisations. Some of them are transaction processing systems, decision support systems, knowledge management systems and database management systems. In order for an organisation to gain its own competitive advantage using information systems such as CI, it has to ensure that its focus is on its structural capabilities (Song and Li-Hua, 2005).

The primary goal of this article is to provide a framework which could guide the deployment of CI products in organisations. This was done by critically analysing current studies, imploring experiential learning of many years in different organisations. Also, the framework is intended to assist employees in organisations to understand the influencing factors in the deployment of CI products.

2. COMPETITIVE INTELLIGENCE

Competitive intelligence (CI) has become a very important source of information for business planning and other activities and is considered to be a set of legal and ethical methods used to gather information about competitors' activities from public and private sources (Jaworski et al., 2002). If organisations understand CI factors and the factors that enhance their effectiveness, they will be more concerned with the utility of their competitive intelligence output, according to Jaworski et al. (2002).

CI is both a product and a process (Myburgh, 2004). The product is information on the competitors in the market and it is used as the basis for specific action. The process is the systematic acquisition, analysis and evaluation of information for competitive advantage over known and potential competitors.

However, gaining access to this information is not enough. It is important to gain the information quickly before the competitor gets hold of it (Johns and Van Doren, 2009). It is therefore important to understand the competition in order for an organisation to be able to adapt to changing market and environmental trends. On one hand, it is argued that CI has the capability to set organisations apart from one another, and that it can also be used to inform an organisation about emerging trends within the business. On the other hand, it can be used to identify threats that potential competition may bring about.

The deployment framework examines four main components: explored business requirements; established the functionalities; interpreted the service offering; took cognisance of the various products listed by Dugal (1998); and understand the human factor:

   i.   Business Requirements

Irrespective of the rationale for the deployment of CI in organisations, requirements is critical. The requirements set the direction and helps determine value, as well return on investment. According to Dugal (1998:24) requirements are important in order for organisations to ensure that the CI function fulfills their specific needs, whether for internal customers or external clientele. The requirements for selecting and implementing CI products are different from both business and technical perspectives. Further, the requirements differ from one organisation to the other.

For many organisations, CI is often intended to be a differentiating factor within the market, as it is able to stand in a better position within the market place. According to De Pelsmacker *et al.* (2005:607) 'CI as a strategic business tool has long been proposed in an effort to increase a company's competitiveness". Cohesive marketing enables an organisation to provide information which enables it to build a consistent and cohesive marketing message that is based on the changing market. According to Buchda (2007), organisations have experienced changes in their market environments and in the industries that they operate in.

CI is a vital component of an organisation's strategic planning and management process and it is therefore important for it to pull together the data and information from a strategic view and to allow

an organisation to predict what is going to happen in its competitive environment (Bose, 2008). The people that are responsible for CI within an organisation are the ones that identify the key information that is passed onto the key decision makers in the organisation. The use of CI products can be the differentiating aspect in the industry. Some benefits of using Competitive intelligence include differentiation, cohesive marketing communication plans, pre-selling as an idea to the target audience and having the ability to build credibility with customers.

ii.   Competitive Intelligence Functions

According to Bernhardt (1993), CI "is a business tool that can make a significant contribution to the strategic management process in modern business organisations, driving business performance and change by increasing knowledge, internal relationships and the quality of strategic plans".

Competitive intelligence is growing in organisations and decision makers are beginning to recognise its role and importance. According to Ignatov (2004:27), "the role of CI could be specified as a method of making information the instrument for stable business development". However, very few publications indicate *how* this function should be installed and positioned in an organisation in order to benefit decision-making and ultimately support the innovation process (Havenga and Botha, 2003).

CI gives some direction to the research and development. Organisations may identify potential opportunities for investing in new technology and help incorporate new technologies into their own products. By so doing, they identify potential technology-based threats to market, share and identify possible partners for collaborative research and development (Vedder and Guynes, 2002). According to Vedder and Guynes (2002: 50), "CI can also play a role in the development and operation of Strategic Information Systems (SIS)".

Business managers as well as executives make the intelligence gathering process easier if they are specific about their intelligence needs such as the strategic alliances and acquisitions, technology planning and decisions in relation to certain competitors (Herring, 1999).

The functionalities of CIs are not necessarily the services that they offer. This could be attributed to human actions and interaction with the organisational structure, as well as with the technology.

iii.   Competitive Intelligence Services

CI products are deployed to offer varieties of services in organisation. Primarily, they are intended to improved quality of information, improved threat and opportunity identification, and improved awareness. According to Johns and Van Doren (2009:552), "there seems to be greater recent need for CI because organisations are constantly changing their services and marketing messages to stay successful". CI is rapidly becoming one of the most significant components information systems services to business (Ignatov, 2004).

As has been established, CI products are deployed for different reasons, primarily for an organisation to have good competitive service and solutions it has to benchmark the services that it offers to its customers. This is intended for organisations to ensure that they stay ahead of their competition and to understand what their competitors are doing and what services they are offering in the market. According to Bose (2008:511), "CI has attracted plenty of attention lately because of the explosion of information now publicly available through blogs, wiki's text messages, e-mail and other electronic communications, which form the basis for building meaningful CI".

An organisation's competitive strategy is also important in order for an organisation to be able to determine the direction in which it wishes to take its business relative to its competition. According to Johns and Van Doren (2009:563) "knowing the competition better prepares the sales team, customer service reps, the product development team, operations and marketing teams to incorporate the information in their jobs so that they may make strategic decisions for the firm".

iv.   *Competitive Intelligence Products*

CI products are used for different reasons within organisations. Organisations realise the importance of Competitive Intelligence and in order for them to remain competitive they have to improve their strategic decisions. By so doing, they are able to perform better than their competitors (Bose, 2008).

It is important for clients to understand what kind of intelligence they require as different intelligence modes can be offered. Dugal (1998:17) also observes that "the products in the product line are significantly unique in terms of their generation and application". According to Herring (1999:5) the critical success factor in any intelligence operation is meeting the user's real needs. The different products, according to Dugal (1998) are as follows:

a. Current intelligence: - a perishable product designed to provide users with first exposure to new developments. It is often used in decision-making and provides legitimacy to the CI function.
b. Basic intelligence: - is designed to help managers make informed decisions and to substantiate recommendations to top management. Current and potential competitors are monitored and industry trends are also monitored.
c. Technical intelligence:- is designed for engineers and scientists as they have special technical skills and backgrounds.
d. Early warning intelligence:- provides an inkling of emerging opportunities or threats in advance.
e. Estimated intelligence:- offers likely scenarios based on the qualitative views of the analysts.
f. Work group intelligence: - the CI analyst gets a comprehensive picture of the groups requirements and can provide the right intelligence.
g. Targeted intelligence:- deals with narrow specific requirements of internal clients.
h. Crisis intelligence: - is generated and delivered by CI support teams formed specifically to alleviate or negate the effects of crisis.
i. Foreign intelligence: - sieved through "culture screens "which might otherwise be misinterpreted.
j. Counterintelligence: - is a non-product. It is effective when the organisation remains secure and its secrets well kept.

Based on the availability of numerous CI products, and the different needs and rationales, it is important to have a framework through which any of the products could be deployed in organisations. Also, human involvement in the makes deployment even more complex. Without a framework, the deployment of CI will continue to be challenging to organisations.

v.   *Human Influence on Competitive Intelligence*

The roles of individuals and groups are significant and critical to the deployment of any CI products in organisations. Human actions determine and influences how CI products are deployed and used, overtime. According to Callow et al (2002), in some organisations the adoption of Competitive Intelligence is dependent on senior management's commitment and alignment to the organisations strategy as they are the ones that provide direction and guidance to the organisations employees. Bradford and Powell (2000:181) argued that management should at all times take into consideration resource-based strategy and core competence thinking cautiously as they require correct assumptions to be made about the environment as well as competitor capabilities.

Creating an environment that supports two-way communication between intelligence users and CI professionals is vital.   In addition, a supportive environment should promote a two-way communication system that both identifies and defines the organisation's intelligence needs (Herring, 1999).

Organisations can use this information to improve their businesses and the service they offer to their customers. According to Hesford (2008:17), "CI involves the systematic collection and analysis of

information about competitors". CI helps strategists to understand the forces (humans included) that influence the business environment (McGonagle and Vella, 2002).

It is important to ensure that the correct business requirements are gathered. According to Herring (1999:5), it requires a cooperative effort by both management (users) and CI professionals to create the environment necessary to support the two-way communications required to identify and define the organisation's real intelligence needs. Once senior management understand their role in the creation of intelligence, the design process can then begin.

An organisation's intelligence needs results in the production of intelligence that management feels compelled to act upon. This is one of the most elusive goals of CI products. Organisations make use of CI products for various reasons. According to Herring (1999:4) the use of a systematized or formal "management-needs identification process" is a proven way to accomplish that task. According to Jaworski et al. (2002:280) "understanding and improving the CI generation process also has considerable practical significance".

3. COMPETITIVE INTELLIGENCE DEPLOYMENT FRAMEWORK FOR BUSINESS ENHANCEMENT

Based on the critical review above, and experiential involvement, a set of Strategic Components and Influencing Factors were exhumed. As shown in Figure 3, both Strategic Components and Influencing Factors formed, and were mapped in the development of the CI Deployment Framework (CDDF).

The Strategic Components are not necessarily influential vice versa in the deployment of CI products in organisations. However, both Strategic Components and Influencing Factors are significant and critical if the deployment of CI is to have return on investment, and enhance the business of the organisation that deploys it.

3.1. Strategic Components

As depicted in Figure 1, the strategic components in the deployment of CI products include 5 components Collaboration, Procedural Value-Chains, Environmental Trends, Regulation, and Adaptability.
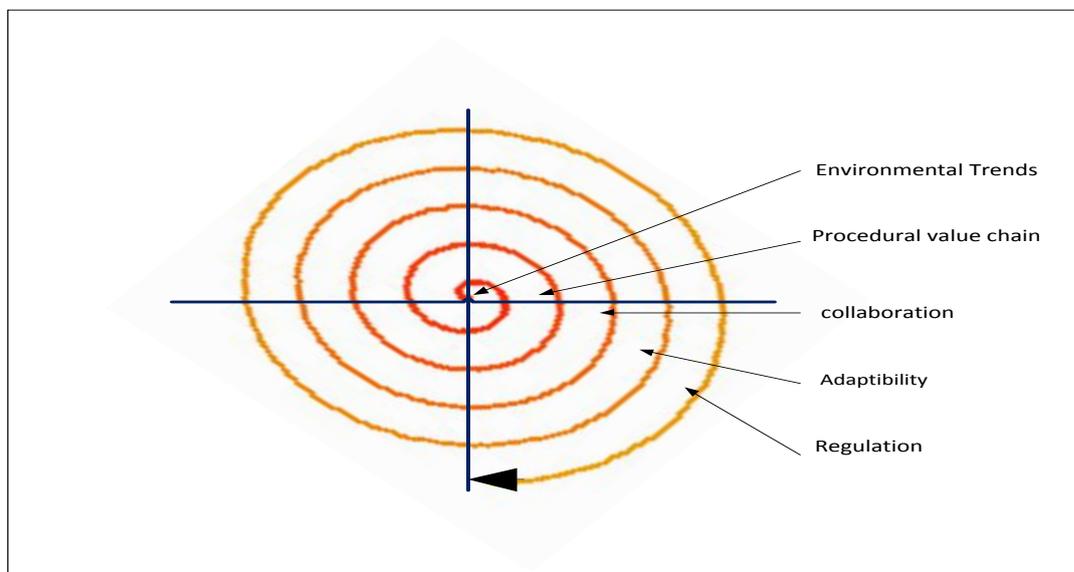

Figure 1: Strategic Components in Competitive Intelligence deployment

i. Collaboration

It is required to have an on-going collaboration among organisational units, particularly business and information technology (IT). The collaboration changes as the functions of the business and the stakeholders that are involved in the deployment of CI products change. The procedural value chain changes constantly as the business changes and environmental trends change. It is important for the organisation to continuously adapt as the environment changes and evolves.   The environmental trends analysis is on-going as markets change and factors that influence them change all the time as environments change. Regulation is an on-going process in the deployment of CI products in the organisations.

Lack of collaboration between the two (business and IT) units could have a negative impact on the deployment of CI products. For example, if either of the two units does not participate in the development of the business as well as its technological requirements, the deployment of CI products in the organisation could be terminated. Also, lack of collaboration could lead to an imposition of technology on the business. IT might also feel that the business unit decided on a tool on their own without them knowing whether the tool would fit in the organisation's architecture or whether there was still capacity to support and maintain the tool.

Collaboration leads to shared accountability and responsibility between the business unit and IT. This also helps to reduce any potential issues that could be experienced during the deployment of the CI products. Collaboration helps each of the business units to understand what the requirements of the other unit are, as well as the reasoning behind their decisions. Thus, both units depend on the other for enablement and support of the process and activities for the organisation's competitive advantage.

ii. Procedural Value-Chain

The communication and technology procedures which are often employed to enable and support processes and activities are aimed at adding value to the organisation. This entails applying different methods and techniques such as technology in providing valuable communication to stakeholders and interested parties. For example, information on the processes followed for the deployment of CI products is readily available on the organisations intranet for easy accessibility. These processes outline what needs to be done by the business units before CI products can be deployed in the organisation.

The channels and structures that are involved in the deployment of CI products ensures that processes and procedures are followed. This assisted the business units in ensuring that they did things correctly so that they did not encounter problems when audits were done. This also encouraged them to follow proper processes and not take short cuts lest they had to re-do some of their work. The organisational structure guided the process as well as the channels that could be followed for the deployment of CI products.

iii. Environmental Trends

The environmental trends are a necessitated vital influence in the deployment of CI products in organisations. The trends naturally manifests from human relationships, costs, maturity of products, and availability of local skill-sets.

Relationships are vital in the deployment of CI products in the organisation. It is vital for harmony and stability among stakeholders. The relationship among the stakeholders influences the selection of and deployment of technology in organisations. The relationships also influence the cost of the technology. The worldwide trends as well as organisational trends play a role in the relationships that the organisation built.

The competition in the environment influences the cost of IT systems such as the CI products, as well skill-set. The organisation had to take the cost of the technology and well as the skill - set into account. This is to ensure that the costs of services are not exorbitant as the skills required to assist with the deployment of the CI products would be readily available.

The organisation also considered the cost of getting new technology that was not used in the organisation. This would have been costly for them as the users of the CI products would not have

been familiar with the technology and in the end this would have been far too costly for them as they would have to get support for the technology, probably from the international arena.

3.2. Influencing Factors

The influencing Factors, which are illustrated in Figure 2, constitute of Communication, Collaboration, Processes and Business (Case) Development. The factors are discussed as follows:
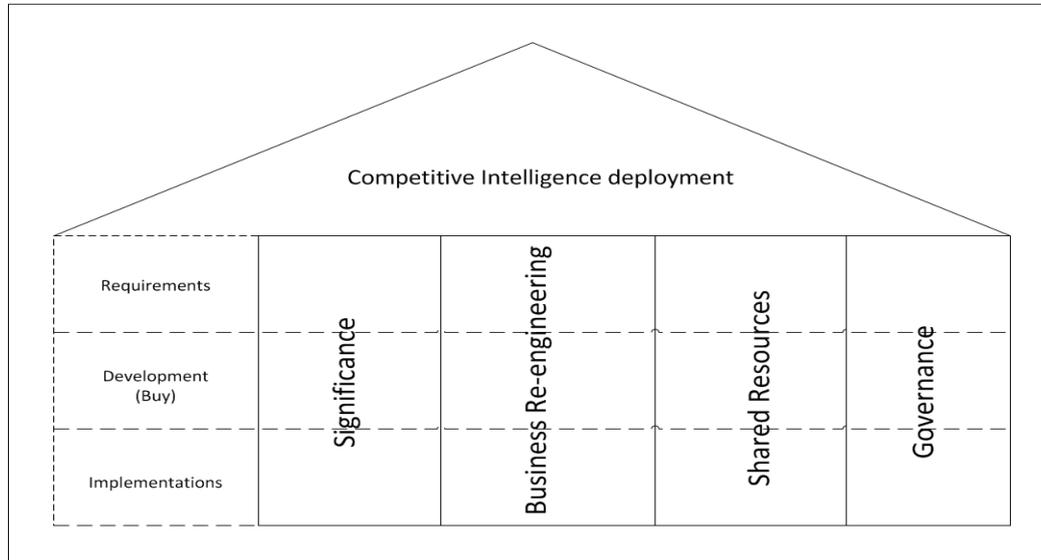

Figure 2: Factors Influencing Competitive Intelligence Deployment

i.   **Shared Resources**

In many organisations, departments and units work in silos, and a result, resources are not shared. Sharing of resources assists organisations to work a lot more efficiently and effectively. For example, it enables them to be able to share ideas and also to assist with clarification of some information that might not be clear.

Also, sharing of resources is of beneficial for the business and IT departments to come together before procurement of CI products. With shared resources, roles and responsibilities of the department that are involved in the deployment of CI products are clearly defined. It also assist in the identification of the resources that would play a role in the deployment of CI products, be it technical or non-technical resources.

ii.   **Governance**

It is important in any organisation for all its employees to understand the rules of engagement which governs the organisation. The organisation should have clearly defined standards that are communicated to the employees. Also, there should be consistency in the application of the standards within the organisation and between the divisions and departments. Over and above all, there should be a structure in place that informs the manner in which things should be done in the organisation, the processes and procedures that should be followed for the deployment of CI products.

By not adhering to the processes and procedures that govern the organisation, each department will follow their own process for the acquisition of CI products and this could prove to be costly for the organisation. The CI products that are introduced in the environment could potentially not fit into the architecture of the organisation and they could also struggle finding resources with the appropriate skills.

iii.   **Significance**

It is important to understand why the organisation decided to deploy CI products in the organisation. Understanding the business requirements is critical for the justification of the business initiative. The

employees of the organisation should understand the business requirements in order for them to see the value and the importance of deploying CI products in the organisation.

If it is not clear why the business is embarking on the deployment of CI products, the employees will not see their value and will as a result not buy into the idea. The significance of the requirements needs to be clear to all the people that will be involved directly or indirectly with the deployment of the CI products in the organisation. This will ensure that their implementation is carried out more effectively.

iv.   Business Re-engineering

Having clearly defined goals and objectives is very important in any organisation. This will assist the organisation with the analysis and design of workflows as well as the processes that they need to follow in the organisation. This will also help the employees understand and clearly identify the tasks that they need to perform in order for them to realise the business goals and objectives. It is important that it is clear what the business and strategic goals of the business are for the deployment of CI products.

If the employees as well as the vendors do not understand what the business goals are they will not be able to deliver solutions that will enable the organisation to achieve its goals. The requirements that will drive the business re-engineering have to be defined as these will influence the development of the business re-engineering. The business re-engineering will shape the implementation.

3.3.   Deployment Framework

The factors in the two groups above are mapped together develop a Framework, Figure 3. The Framework is aimed at providing an in-depth understanding of the socio-technical factors which influences and guides the deployment of CI products in organisations. The Framework is further discussed below.
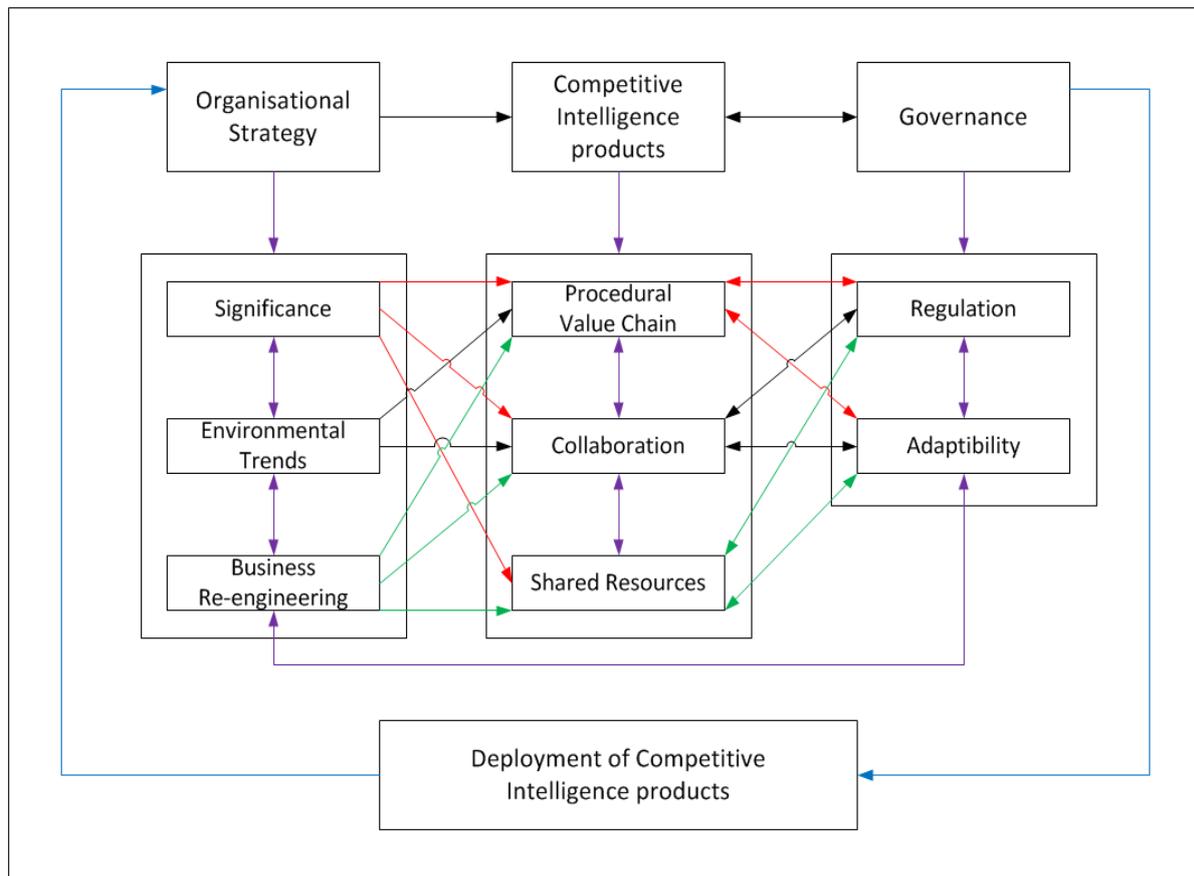

Figure 3: Competitive Intelligence Deployment Framework

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The organisational strategy consists of the goals and objectives of the organisation. The strategy dictates and drives the selection and deployment of CI products in the organisations. As depicted in Figure 3 above, three factors were identified as critical in the organisational strategy. The factors include signification (significance) that is the importance of processes and activities to the organisational strategy; environmental trends, which take into consideration factors which are external to the organisation, but relevant for competitive advantage; and business re-engineering, which evolves over time as the organisation strives to meet its goals and objectives.

The selection of CI products is based on the organisation's strategy. CI products are intended to facilitate and support strategic objectives such as the procedural value chain; collaboration among the processes and activities; and sharing of resources for competitive advantage. To ensure that the selection and deployment of CI products meet the organisational strategy, governance is formulated.

The Governance constitutes standards, principles and policies, which are made of processes. These standards, principles and policies are used to guide the deployment of CI products in the organisations. The aim is to ensure consistency, flexibility and adaptability of CI products within the organisation. The processes as defined by the governance need to be understood, visible and adhered to by employees to ensure that the deployment of CI products in the organisation achieves the strategic objectives.

The significance of the CI products and its business re-engineering is driven by the organisational strategy. The environmental trends from the perspective of CI products are highly considered in the organisational strategy. The organisational strategy is very significant and this influences many factors including the procedural value chain pursuit at the time. The significance of the goals and objectives defines the collaboration which occurs amongst the stakeholders, (internal and external stakeholders), including the processes which are involved in the selection and deployment of CI in the organisation. The collaboration also influences how resources (technical and non-technical) are shared within the organisation.

The business re-engineering also influences the manner in which the organisation responds and reacts to environmental trends. The internal as well as external environmental trends impact on the procedural value chain and the processes which guide the selection and deployment of CI products in the organisations. In addition, the collaboration which occurs has an impact on how resources are shared, as well as how business re-engineering is carried in the organisations.

Governance is critical when defining the adaptability of the environment and the CI products that are deployed. An adaptable environment influences how resources are shared. Sharing of resources makes collaboration effective and efficient.

The regulations of governance define and shape the environment in terms of adaptability and flexibility. This ensures the correct fit of the selection and deployment of CI products in the organisation.

The management and process orientation of the components as depicted in Framework Figure 3 above assists the organisation in achieving its goals and objectives in the pursuit of competitive advantage. The Framework is aimed at understanding the socio-technical factors; thereby enhance the selection and deployment of CI products in the organisations.

4. CONCLUSION

The article is of significant contribution in that it is important for organisations to have a good understanding, and assess the service offering, functionalities, suitability and requirements of CI products which they intend to deploy.

Another contribution of the article is the practicality it brings on the socio-technical nature of the deployment of CI products. It makes a huge contribution as it helps the business and IT managers to

understand the influencing factors. How these influencing factors manifested themselves into the pitfalls which impacted and sometimes derailed the selection and deployment of CI products is of great importance. These pitfalls influence the deployment of CI products and it is important for organisations to be aware of them and to address them in their organisations.

The article exhumes factors which are critical but are never understood, or are often taken for granted during the selection and deployment of CI products by some of the stakeholders. For example, the managers would now understand the importance of roles, responsibilities and governance in the selection and deployment of CI products. There is a high likelihood that this would help the organisation improve its competitive advantage.

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