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RESEARCH ARTICLE

BUSINESS-IT STRATEGY ALIGNMENT: COMPLEX SYSTEMS

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ABSTRACT

Both information technology IT and Business leaders are continually looking for methods and practices to align their IT and business strategies. Alignment seems to become more important for companies to survive in a competitive and evaluative market. Literature proposes several models, but it never takes into consideration the complex characteristics of this strategic alignment, which undergoes the interventions of several agents. This paper proposes a new approach of strategic alignment based on complex systems and analyses agent influencing this alignment.

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INTRODUCTION

Regardless of its role, any investment in the IT must provide benefits. This means that IT must be flexible and efficient to follow the strategy of the company (Aouatif Benkhayat, 2015). So we talk about business-IT alignment, which addresses fitness and harmony of IT and Business strategy. Literature has proposed several definitions of Business-IT alignment. Wong defined the strategic alignment as "the appropriate application of information technology in supporting a company's strategy, goals and needs" (Wong, 2012). Jorfi presented the nearest definition to our conception in literature (Jorfi, 2011). He described strategic alignment as "the degree that business mission, objectives and plans support and, at the same time, are supported by information technology mission, objectives and plans" this joins the circular nature of business strategy and IT strategy; so business strategy influences technology strategy which in turn shapes business strategy. If the firm views the technology function just as a support of business strategy it may miss the way in which technology can help shape business strategy. New information technologies are nowadays very important to position companies in a competitive environment, so they become the key instrument for the implementation of the corporate goals (Liebert, 2012). In parallel for the use of IT, a clear strategy is needed (Helmke, 2013), which enables a business organization to use IT effectively to achieve business objectives, as improving financial performance or marketplace competitiveness. The subject of Business-IT alignment has been one of the top tasks for IT and Business managers. Luftman reported that the strategic alignment continues to be among the top financial officers issues, "in all of the geographies, IT and business alignment ranks in the top 10 management concerns; ranking 1st in the US and Europe, 2nd in Latin America, and 6th in Asia" (Luftman et al., 2012). However, the problem here, is that companies have limited budget for IT matters (Pollard, 2009), as optimizing business process to improve efficiency increases costs significantly (Tiemeyer, 2011). Although it is important to have a consistent alignment of the IT services so that costumer requirement can be achieved (Brenner et al., 2005).The major challenges in this case are the functioning of the interaction between people, processes and technology. In organizations it happens often that the communication of the needs from business to the IT organization is inadequate and conflict-loaded, requirements are ill defined and fuzzy (Roland_Schütze, 2018).

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The challenge of strategic alignment: Research shows that 85% of executive teams spend less than one hour discussing strategy and only 5% of the workforce understands strategy. Executives spend days or weeks designing well-crafted strategies and then throw them "over the wall" to the rest of the company hoping that their vision will bear fruits. Actually, the IT is the key instrument for the implementation of corporate goals. A clear strategy is needed to use IT effectively to achieve business objectives and improved financial performance. So IT and business strategy should be in harmony and have to achieve the same goals. In this perspective, we talk about strategic alignment, which have to get some important elements to be profitable:

- A clear understanding of stakeholders' requirements and external influences.
- An unequivocal statement of strategy, with clear performances measures and measurable objectives.
- Systems and process, which enable the strategy to be communicated in a consistent and appropriate way to all corners of the organization.
- A highly trained work force that is equipped and competent to act on the strategy.
- Feedback mechanisms that enable to identify the under over performance rapidly so that remedial actions can be taken to bring the defined strategy back.

Investigating failure in strategic alignment: No industry is immune from project failure, the IT industry is more susceptible to risk and failure than other industries. Moreover, when we talk about IT failure, it means to fail in following Business strategy and be aligned to it. Most failures can be classified into one or more of the next categories:

- Failure to meet the approved schedule.
- Failure to achieve cost objectives.
- Failure to provide the expected project scope.

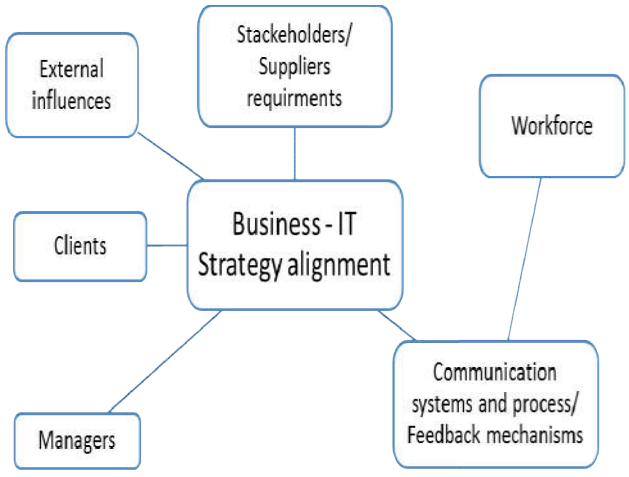

Figure 1. Agent influencing Business-IT strategy alignment.

Lyytien and Hirchheim, have defined 4 categories of failure (Lyytinen, 1987):

- Correspondence failure: Systems design objectives or specifications not met.
- Process failure: insufficient allocated schedule or budget.
- Interaction failure: User attitude, satisfaction, and frequency of use don't correspond to the level of system usage, which means that the system is developed out of necessity and without increased tasks of performance.
- Expectation failure: system does not meet stakeholder requirements, expectations or values.
- That shows that different intervening influences the strategic alignment. Agents cited below as causes of IT project failure can be summarized in the graphic below:

Influence of these agents varies according to the complexity of project. Meredith has defined two types of projects (Meredith, 2002):

- Routine projects (well understood) with a clearly defined scope and a few unknowns. Their complexity may be due to their intense details, so they may run late or over budget. This type of project can fail, if technical expertise is lacking to handle an unexpected deviation from the plan.
- Complex projects with many unknowns and an unclear scope. Their complexity is related to planning problems and defining project scope.

On the other hand, Murray provided the following attribute facture of IT project failure (Murray, 2000):

- Unrealistic project scope giving the available resources and project development experience.
- Improper management of scope: the continuous expansion of the project scope.
- New technology that is critical to the project has not be previously developed.
- The organization's issues are not understood.
- Customer work is needed for the organization's business activities.

Ropponen and Lyytinen, have linked the failure of IT projects to following risks (Janne Ropponen and Kalle Lyytinen, 2000)

- Scheduling and timing.
- System functionality.
- Subcontracting.
- Requirements management.
- Resource usage and performance.
- Personnel management.

Basing on discarded projects, especially the ones that were annulled by mangers or stakeholders, because they think that the project would not successes. Ewusi-Mensah (Ewusi-Mensah, 2003) has defined the following "Abandonment Factors" of IT projects:

- Unrealistic project goals and objectives.
- Poor project team composition.
- Inadequate technical expertise.
- Problematic technology infrastructure.
- Lack of executive or support/commitment.
- Changing requirements.
- Cost overruns and schedule delays.

We conclude that failure to align IT with business often has multiple causes. However, they can be summarized in two root causes: lack of adequate and sufficient resources and the complexity linked to the project itself. In a recent study by (16) on failure or IT project, they have broadened the causes of failure projects by including the complexity and size of multifaceted projects as a root cause.

Actors influencing strategic alignment in complex system environment: A complex system exists at a tacit level that we will never be able to fully understand, or precisely to represent in a model. A representation of a complex model will be always incomplete, abstracted and subject of the observer's vantage point in time (Skyttner, 2001). As we have defined below the following agents influence strategic alignment according to their intervention's degree:

Managers: The project managers in ancient literature were described as "homeostats" regulating their internal environment to maintain stability with defined goals. Changing their inputs in real time, reconfiguring themselves internally to change their outputs. However, with complex systems, the project manager's effort to detect an overall trend or pattern may turn up to be useless. They cannot anticipate future complications. Therefore, skills focus and good requirements are necessary to manage the project effectively.

External influences: Business executives view the impact of external factors such as competition and business environment as one of the most difficult aspects of IT strategic planning. In IT literature, one stream of studies has considered environmental uncertainty as an antecedent of strategic alignment. Sabherwal and Kirs (Sabherwal, 1994) hypothesized environmental uncertainty as an inhibitor of alignment between an organization's critical success factors and its IT capabilities. Teo and King investigated the effects of dynamism, hostility, and heterogeneity on strategic planning integration (Teo Tsh and King, 1997). Chan argued that managers are more likely to rely on IT in high uncertainty environments and hypothesized environmental uncertainty as an enabler of strategic alignment (Chan Ye, 2006).

However, none of the treatments for environmental uncertainty, whether as an inhibitor or activator, has been validated empirically. External factors must be taking in consideration to effectively successes. Organizations and the environment they operate change continuously based on 'PESTEL factors' (Political, Economical, Social, Technological, Environmental and Legal). These factors are usually beyond the control, so the best to do is improvise when they occur.

Client: When clients are involved in the project releases, they may not be satisfied with the project team's interpretation and will request minor changes through the process while significantly impact the functionality of existing modules. Undesirable results after these types of releases can leave a project far behind schedule.

Communication process and feedback mechanisms: In the literature, there is evidence that communication leads to mutual understanding or alignment. Participants create and share information with each other to reach mutual understanding. Rockart suggest that communication ensures that business and IT capabilities are integrated into the business effectively (Rockart, 1996). Which means that the degree of personal relationship between IT and non-IT executives is a major factor influencing alignment.

Workforce: Organizations rely always on individual employee skills, motivation and knowledge to achieve their objectives, and ultimately generate profits. The relationship with employees should rely on trust, motivation and a learning relationship to deliver intangibles such as service, flexibility and innovation (For a discussion of the importance and emerging role of trust in organizations, 1995). Employees will not develop the skills and knowledge or make effort to use process effectively unless the company meets their required employment conditions. Kerzner raise the importance of human dynamics in project management (Kerzner, 2009); they highlighted next major causes of failure:

- Poor motivation.
- Productivity.
- Human relations.
- Lack of employee and functional commitment.
- Delayed problem solving.

Stakeholders and suppliers: At beginning, the relationship between the company and its stakeholders should be defined to help achieving objectives defined by the organization's owners. These relationships include specifying what each stakeholder group must contribute to the company to help to achieve its objectives and what each stakeholder group expects to receive in return. Companies must meet their stakeholder's requirements to ensure their continued participation. Organizations often rely on supplier's skills and support. They will never provide theirs skills, knowledge, and resources to companies that fail to give them an opportunity to earn a reasonable return on the investment of their time and capital.

Conclusion

Literature on IT-business strategic alignment proposes different models to measure this alignment, and offers practical models that try to quantify the degree of alignment between Business and IT strategy (Aouatif BENKHAYAT, 2016). However, we never talk about the complex characteristics of this alignment. In this article, we have defined the different factors affecting the strategic alignment in organizations, and defined several reasons of failure in IT project. In next researches we will focus on the aspect of complexity of Alignment.

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