

Integrated Planning of Information Systems and Contingency and Recovery

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Summary

This article intends to emphasize a group of inherent concerns to the Contingency and Recovery Planning when integrated with the Information Systems Planning. It begins with the approaching to the positioning of Information Systems Planning and Contingency and Recovery activities in the organizational context, afterwards it propose an approach to developing in an integrated way the planning of that activities evidencing the outcome of this integration. Finally, it mentions the characteristics and advantages of this new approach, weaving considerations about the inherent concerns to ensure the business continuity.

Keywords: information technologies, information systems, information systems planning, contingency and recovery planning.

1. Introduction

Seeking for competitive advantages, the organizations have been rising their dependency of the Information Systems (IS), which raises inherent concerns with the non-disruption of the Information Systems/Information Technologies (IS/IT) that support their business. Thus, when planning the future of an organization it is important the Contingency and Recovery Planning (CRP) being developed at the same time of the Information Systems Planning (ISP).

Due to the concerns of implementation of contingency and recovery measures, needed to maintain the IS uninterrupted in the future, an integrated approach of the two activities planning appears.

In the second section, it is analyzed the positioning of the CRP activity in relation to the ISP activity. The concerns of contingency nature are usually set out after the ISP implementation, consequently the implementation of those measures become more complex given the irreversibility of the nature of some decisions that have been taken in this phase.

In the third section, it is proposed an approach about the integration of the CRP and ISP activities, allowing that the concerns of contingency nature being faced as a solution from the root in the ISP developing. It is pointed out the importance of the knowledge of business strategy, which allows knowing its nature, characteristics and perspectives of evolution, as well as being the base to define the contingency politics. It is yet mentioned the importance of defines the criticism level of the information and IT support, in order to the business continuity being a reality.

In the fourth section, it is mentioned the implicit characteristics of the simultaneity of ISP and of CRP, as well as the inherent advantages of this new approach. The proposed approach makes possible a unique and integrated planning in perspective with the solution of the business needs. As a consequence the time spent in the activities planning is shortened.

In the fifth section, some conclusions on this integrated approach are being presented and can be summarized as follow: actually CRP and ISP are developed in a disaggregated way, what implicates the conditioning of CRP in consequence of the decisions nature that have been taken during the ISP. For that reason, it is recommended the simultaneous development of the CRP and the ISP, as a way to solve the inherent gaps of the traditional process.

2. Positioning of the ISP and of the CRP activities

The illustration 1 represents the Matrix of Planning Activities and organizational development and the IS. In there, it is identifiable that the activity of ISP (quadrant I) should consider the support of the influences with the organizational planning ("area a") and the connections with ISD¹ ("area b"). These connections of ISP with the organizational planning and with ISD are frequently pointed as indispensable for its success [Amaral 1994].

CRP appears associate traditionally to the need of the organization in creating conditions to preserve the business. Actually, the CRP is developed in a disaggregated way. Being intended that it should be developed simultaneously with ISP, its positioning in the matrix of activities can be characterized as represented in the illustration 1.

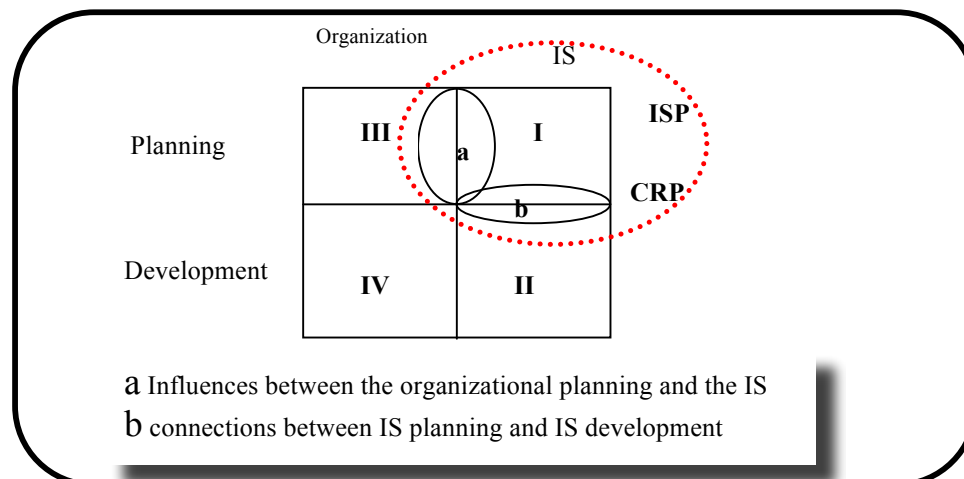


Illustration 1 - Matrix of Activities: Positioning of CRP

Adapted from: Amaral, Praxis - A Referential to the Information Systems Planning, 1994, p. 157.

The coincidence of the CRP with the ISP, showing in the illustration above, means that the first one can be dilute in the second one. It allows, since the conception of the IS, to solve the concerns related with the recovery of the IS in case of accident, as well as to create the necessary conditions for the system being operational in an uninterrupted way.

Thus, we defend that the concerns of contingency nature begin to be set out since the strategic analysis. From the iteration between the organizational planning and the ISP should be set out the risks on which the organization is exposed and that can jeopardize the business, in order to

¹ ISD -Information System Development

develop simultaneously an appropriate CRP adequate to the dimension and needs of the organization.

The connections between the planning and the IS development, after melting in the concerns of contingency nature, are characterized by the ISP and the CRP don't terminate at the same moment. After the ISP being concluded takes place the implementation of the measures considered appropriate to the contingency process. Then begins the implementation of methodologies that will assure that the defined CRP is in constantly actualization, in order to assure the continuity of the business based on this planning when an accident occurs.

Thus, while ISP is ended, we advocate that CRP, that had beginning simultaneously with ISP, is prolonged in time, given the nature of their concerns related with the continuous operation of the IS. The implementation of the contingency and recovery methodologies should only occur later to the conclusion of ISP, and during its development.

3. Integrated approach of ISP and of CRP

Given the complexity of the organizations, the circumstances in that the activity of ISP is developed in an organization and in one particular moment are potentially different from the ones that are verified in any other organization. The origin of this diversity lies in a set of incidental factors proper of each organization and in the peculiar situation of each one of them in a given moment, being possible to point out: the different motivations for the exercise of this activity, the different goals that are imposed to it, the several used methods, the involved collaborators' capacities and the influences that elapse from the organizations being open systems. [Amaral 1994].

The elements (or phases) of this approach are the analysis of the organization, the business strategy and the business continuity.

The elements that induce the use of tools are considered as being instruments for this approach and they are the ones that we feel actually as more pertinent. It should be clear that of course don't exist the pretension to transmit its adequacy along the time. The use of other tools should be strictly analyzed in function of the tendencies of their evolution and in function of the organization.

Organization

In this phase, we should put the emphasis in the binomial internal environment vs. external environment. It is necessary to frame in the mission, the goals and the culture of the organization.

The knowledge of the organization mission allows knowing the its purpose or in other words the fundamental reason of its existence. The mission declaration is a global declaration on the purpose of the organization and perspective the activities that distinguish it from another of the same type, allowing to the external entities –customers, suppliers, governmental offices– to obtain an image of the organization, concerning to its values, quality patterns, etc.

Business Strategy

In the external environment analysis should be consider the organization public-target, the competition and determine which are the changes verified in society and in economy, in order to find the existence of opportunities and to set out the threats, as well as the strengths and weaknesses of the organization.

Continuously, should be analyzed the impact of strategic objectives in the organization and in their IS, to define the activity patterns and to define the specific tactics that lead to the implementation of the delineated strategy.

This set of information about the business strategy is crucial for the knowledge of the business needs as well as for the correct definition of politics of safety, contingency and recovery, avoiding so the interruption of the IS.

Continuity of the business

The third phase of this approach, but not the least important, is that one where should be done the analysis of the IS architecture and of the impact to the business and to evaluate the risks that the organization is willing to eliminate and to support, assuming in a conscious way that a part of its IS will be exposed, because it was not possible to consider it in the CRP.

In the risk evaluation, we should intend to characterize the strategic information for the business and the applications considered critics for the business units, as well as the critical processes about which the interruption of IS will seriously jeopardize the continuity of the business. As final product we will have the inventorying and discrimination of the critical systems for the business –those that implicate the implementation of methodologies in order to turn the IS in a system of continuous operation that, consequently, guarantee the continuity of the business.

The architecture allows to analyze the functions and procedures of the organization, to execute the analysis of the IT that support the development of the business, in a way to obtain a rigorous knowledge of it. Following, the data structure should be analyzed being inventoried its formats

and types. Finally, should proceed with the identification of the infrastructures to characterize the actual state of the art and to evaluate the future needs of upgrades.

The contingency has for base the output of the previous phases –the knowledge of the infrastructure and their procedures, of the critical applications and, in global, of the strategic and critical information–, becoming then crucial to determine the extent of CRP.

Taking the conscience of the set of threats to the IS, it is possible to assume in a conscious way the kind of threats that won't be considered in the CRP, given that there is no CRP that covered all the possible threats. That is, once CRP involves financial resources, it is important to define during its conception, in a basis of risk analysis, the systems that will be included, in order to avoid that the unnecessary investments could compete to jeopardize the financial stability of the organization.

The CRP, at minimum, shall include the systems that support the activities that are the core of the organization. If, even so, the investment needed to its implementation is still considered to high, then it is important to select with criteria the systems that shall be included in CRP, being always present that the eventual disruption of the systems not included in the plan, will never jeopardize the business continuity. If such happen CRP won't accomplishes with their goals.

A report with a set of recommendations, based on the contingency level previously accorded with the top management, should be provided.

4. Characteristics and advantages of the new approach

The main characteristics and advantages of the present approach settle essentially in the elimination of several types of redundancies, in the following areas: teams, resources, time and infrastructures.

At the level of teams will be clearly advantageous the existence of a unique team for the planning activity proposed in this approach, considering the amount of information that interacts among the two activities. The largest perception about the project as a whole facilitates extraordinarily the conception and implementation of CRP.

The human resources involved in planning activities will be considerably reduced if the same team that proceeds to ISP were involved simultaneously in CRP. On the other hand, the fact of not being necessary to transmit information among two different teams nor being necessary integrate a new team in ISP to develop the CRP, allows a larger adherence of CRP to the reality of the organization, because that team knows the implemented ISP characteristics.

The material resources will also be considerably reduced given that it is conceived a solution from the root. Thus it's possible to avoid that later the solutions founded to the ISP has to be

reformulated, in case the IT don't support the implementation of those solutions, function of the contingency concerns. Sometimes, even some incompatibilities can appear in the systems interconnection, that force to a larger financing effort for the implementation of CRP.

The times are manifestly shortened given that the tasks of CRP, or a significant part of them, are going being realized in parallel with the ones of ISP. The fact of ISP and CRP are undertaken simultaneously has reflects in the eventual need of a larger period of time to conclude ISP, comparatively to the traditional way of doing this. However, and in the presence of the enunciated advantages, considering the simultaneous development of ISP and CRP it allows a global reduction of the times needed for its development, given the parallelism of some activities in the course of the process as a whole.

The infrastructure will be conceived as one from the root. Thus, it will be an actual infrastructure, thought to support the project entirely, with future vision and technologically in permanent mutation. Until now, the contingency and recovery procedures have been implemented on existent infrastructures, with some lifetime and, a lot of times, with hardware where were incorporated in several upgrades. What has been verified is that in a given moment it is impossible to include new upgrades, be it because the systems were discontinued by the manufacturers or be it for financial contention reasons.

It is extraordinarily pertinent that the recovery strategies being defined as a subsequent step of the analysis of the actual situation, of the technological infrastructure study and information flows and, more concretely, after being determined the critical applications for the success of the organization. In this way it's possible to have a global vision of the process of ISP and CRP as a whole.

In this phase, the integration of CRP and ISP can allow the validation of incoherences during the definition of priorities of the applications that will be developed according to ISP. That is, during the development of CRP it's possible to detect that an application with priority three, for instance, supplies input data to an application with priority one, developed in the extent of another project. To solve this situation it can be necessary to alter the established priorities in ISP and to reformulate the project schedule. If this situation is detected a posteriori, usually forces to a considerable effort to re-affect human, material and even financial means and in the extension of the working schedule, in order to conclude the development of the first application in an useful time for the implementation of the second one.

5. Conclusions

At organizational level it will be obtained a larger involvement and compromising of the organization, be it for the clarity of the proposed approach, be it for its low degree of implementation complexity. Being crucial this level of the organization involvement for the success of a process of this nature, it is considered itself an advantage of significant degree in the valorization of the approach presented above.

The business strategy should be analyzed and included in the approach, because this determines and will be determined by the IT. So the solutions that will be proposed in contingency terms, should have consider the business strategies in order to improve the decision process.

The integration of ISP and CRP allows finding new solutions technologically powered, actual, coherent, efficient and effective, improving the IT according the business objectives.

It is our opinion that the integration of the two activities allows larger coherence in the process, making possible the total integration among the technological components involved in a process of this nature, namely the communications, the recovery centers, the hardware and the software of the organization.

From this integrated process it's possible to concluded that the contingency and recovery strategies will be more efficient and more adapted to the reality if they'll be undertaken simultaneously with ISP.

The IS strategies according to the factors previously exposed are facilitated and they still make possible a future projection of the IS. In this way, the IS upgrades and or replacements that can take place are going to be easily echoed in the respective CRP.

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