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BUILDING A BUSINESS PLAN IN A PUBLIC RESEARCH INSTITUTE: LESSONS FOR THE FUTURE

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Resumo

Este artigo analisa o processo de planejamento para 2013 do Instituto de Pesquisas Tecnológicas do Estado de São Paulo. O objetivo da pesquisa é discutir os benefícios e os desafios do processo de planejamento em um instituto público de pesquisa. O método de pesquisa aplicado neste trabalho foi pesquisa bibliográfica, com pesquisa-ação e metodologia de coleta de dados de observação participante. Para complementar a pesquisa bibliográfica e a observação participante, documentos internos foram consultados. Os principais resultados desta pesquisa referem-se à concepção, criação e difusão do processo de planejamento de negócios, além das ferramentas utilizadas no processo. Os resultados permitem concluir que, se o processo de planejamento é realizado com uma visão baseada no mercado, é mais provável resultar em um plano de ação a ser apoiado pelos Conselheiros e Diretoria. Para tanto, é necessário que todas as esferas do Instituto estejam envolvidas, a fim de chegar a um processo de planejamento bem sucedido, com foco em uma relação de confiança entre todas as partes envolvidas.

Palavras-chave: planejamento estratégico; plano de negócios; institutos de pesquisas públicos.

Abstract

This paper analyzes the design of planning process for 2013 in the Instituto de Pesquisas Tecnológicas of São Paulo state. The research objective is to discuss the challenges and benefits of the planning process in a public research institute. The research method applied in this work was literature research, with action research to problem-solving. The methodology of data collection used was the participant observation. To complement the literature research and participant observation, additional internal documents were also consulted. The main results of this research refer to design, creation and diffusion of the business planning process and tools presented in this paper. Conclusions showed what, if the planning process is conducted with a market-based view, is more likely to result in a action plan to be supported by the Board and Executive Directors. To reach this objective, it is necessary that all spheres of the Institute are involved in order to reach a successful planning process, with focus in a trust relationship among all parties involved.

Keywords: strategic planning; business plan; public research institute.

1 Introduction

Considering that each business unit can contribute to the success of the organization, the strategic planning of each unit can impact on the organizational success. In cases where the business units are considerably independent, there is a greater need for a corporate strategy and instruments to align and coordinate the efforts.

In this context, the problem studied was the design of planning process for 2013 in the Institute of Technological Research. The research objective is to discuss the challenges and benefits of the planning process in a public research institute. In order to do so, the paper presents a literature review on strategic planning, as well as a case study conducted in a Brazilian public research institute, bringing empirical evidence to the literature. The Institute of Technological Research (in Portuguese, Instituto de Pesquisas Tecnológicas, IPT) counts with over hundred years of experience and is an important agent in the integration between industrial demands and the basic technology developed by the universities (Instituto de Pesquisas Tecnológicas, 2011).

2 Literature Review

In this section, two main subjects will be presented: (1) an overview about the Research Institute – IPT and (2) the concept of Strategic Planning, as described by Ansoff (1965), discussed by Steiner (1979) and Mintzberg (1994a, 1994b) and compiled by Kotler & Keller (2006) is discussed and it is followed by arguments on the Value Chain Model proposed by Porter (1986). Marcovitch & Vasconcellos (1977) who presented a model of strategic planning for research institutes, are also approached in the present section.

2.1 IPT

The IPT, linked to the Department of Economic Development, Science and Technology of São Paulo State (SDECT), was born in 1899 and has direct impact in Brazilian industry innovation. Its mission is to “develop and apply technological solutions to increase competitiveness and promote quality of life", while its vision statement is "to have national leadership and act internationally in the development of advanced technologies". The institute activities are guided by the following values: "integrity, ethics, probity, impartiality, technical competence and quality in the process of continuous improvement" (Instituto de Pesquisas Tecnológicas, 2013). The IPT gathers technical competencies in several research areas, such as geology, civil engineering, IT programing, nanotechnology and metallurgy, among others.

Organizational structure, as stated by (Vasconcellos & Hemsley, 2002) is how corporate governance is distributed in an organization and is usually reflected in its organizational chart. According to the authors, organizational structure is conditioned to determining factors: (1) objectives, that portray the desired future state of the organization; (2) processes, which determine the activities and routines that enable the operation, (3) behavior, which can be understood as the way people behave towards the organization's objectives and business strategies, and are conditioned by the culture of incentives and punishments of the organization, (4) business model, which is the way the organization chose to reach its results, and (5) innovation, which can influence the competitiveness of the company .

Marcovitch & Vasconcellos (1977) analyzed the structure of research and development institutes and present a model which describes an organizational structure, which is very suitable to IPT. According to the authors, the research institutions have three subsystems: (1) subsystem of Direction, which is concerned with coordinating the activities of the Institute, trying to keep the other two subsystems in equilibrium, seeking efficiency and effectiveness; (2) subsystem of Projects, responsible for the implementation of projects according to pre-established plans approved by the subsystem of Direction, and (3) subsystem of support, which is responsible for providing the necessary infrastructure for the projects to be executed.

Vasconcellos & Hemsley (2002) define departmentalization as the configuration in which a group of people can be administered. The authors list some traditional forms of departmentalization: functional, geographic, process, customers, etc. The organizational structure of IPT in 2012 (Instituto de Pesquisas Tecnológicas, 2012) is based on competency and was divided in thirteen technological centers (TC), which operated 40 laboratories. The TC is at the time are listed as follows: (1) Technological Center for Constructed Buildings; (2) Center for Environmental and Energy Technologies; (3) Technological Center for Technical and Manufactured Textiles; (4) Center for Information, Automation and Mobility Technology; (5) Center for Integrity of Structures and Equipment; (6) Center of Mechanical and Electrical Metrology; (7) Center for Metrology of Fluids; (8) Center for Metrology in Chemistry; (9) Center for Naval and Ocean Engineering; (10) Center of Forest Resources Technology; (11) Technological Center for Infrastructure; (12) Center for Products and Processes Technology; (13) Center for Technological Assistance to Micro and Small Enterprises.

Each of TC´s can be considered as a Business Unit and is allocated under supervision of the Operations Executive Direction. In addition to the TC´s, IPT counts with the following support areas: Quality, Business & Planning, Infrastructure, Library, Financial Project Administration, Accountability, Human Resources, Supply, Information Technology, Technological Education, Legal Advice, Corporate Relations, and Marketing.

Vasconcellos (1979) addressed the issue of centralization and decentralization in research institutes. According to the author, centralized organizations have extremely low speed of decision, while the other can cause reduced quality of coordination, duplication of activities and loss of control. Advantages of decentralization are the speed of answer, which becomes more adapted to the needs of the unit, developing management capacity. The centralization brings advantages such as standardization, reduction of duplication of activities, coordination of interdisciplinary activities, besides lower idle of capacity. Motivation can be an advantage in both forms of organization. In the case of IPT, had a hybrid structure, the decentralization of researchers in technological centers, together with the centralization of support areas.

2.2 Strategic Planning: challenges and recommendations

The evolution of the Strategic Planning consists on the need for companies to stop looking exclusively into their internal environment and to begin to observe and understand also the external environment. Ansoff (1965) discussed the influence that the external environment has on business operations and proposed a matrix of products and markets, known as the Ansoff Matrix (Figure 1). Each quadrant shows a different strategy a firm has

for its product portfolio and the company must have products in quadrants that better reflect their strategic decisions (Ansoff, 1965). According to the author, strategy is defined as "the set of rules of decision making under conditions of partial ignorance. Strategic decisions concern the relationship between the company and its ecosystem."

		Product or Service	
Market		Actual	New
	New	Market expansion	Diversification
	Actual	Market participation	Product development

Fig. 1: Ansoff Matrix.
Source: Ansoff (1965)

Marcovitch & Vasconcellos (1977) developed a basic instrument for the operationalization of strategic planning for research institutes. According to the authors, the institutions of research and development are embedded in a dynamic organizational environment, which changes with a significant speed. The plan, according to the authors, leads to the definition of objectives, targets and analysis of trends for the future. The authors define the following steps to be followed for planning: (1) definition of objectives; (2) environmental analysis; (3) opportunity analysis; (4) identification, evaluation and selection of alternative; (5) implementation and control.

Steiner (1979) conducted a quantitative study to assess the strategic planning process in thousands of large companies. Two main problems were identified: (1) the lack of top management support and (2) organizational “climate” not prone to planning. (Mintzberg, 1994a, 1994b) defines “planning as formalized procedure to produce articulated result, in the form of an integrated system of decisions”. According to the author, the pitfalls described by Steiner (1979) are inherent in the planning process as it was carried out so as to discourage the organization's commitment to the plan resulting from the project. This discouragement comes through what he calls the "fallacies" that generate the great fallacy of strategic planning: "Because analysis is not synthesis, strategic planning has never been strategy making. (Mintzberg, 1994a, 1994b) suggests an approach for successful planning: planners should not worry about the "strategy programming", but rather about strategy formulation. They should be "finders" of emerging strategies, acting not in the "planning" strategic, but in strategic "thinking" and strategic "action".

Kotler & Keller (2006) argue about a methodology on how to conduct the strategic planning in Business Units. As in the Marcovitch & Vasconcellos (1977) article, the strategic planning described in the book considers the strategy for long term (3-5 years). However, as discussed in the following section, the case studied in the present research adapted the methodology for a Business Plan for only one year. The process prescribed by Kotler and Keller (2006) is discussed below.

The authors start discussing the Porter (1986) Value Chain (Figure 2), which describes the value creation and delivery for costumers enabled by the firm operations. According to the model, the firms are organized in order to project, produce, commercialize, deliver and sustain their product portfolio. According to the author, nine activities contribute to value creation. Five of them are primary activities: (1) internal logistics, (2) operations (product transformation), (3) external logistics, (4) sales and communication, (5) services. Meanwhile,

four of them are support activities: (1) acquisition, (2) technology, (3) human resource, (4) infrastructure.

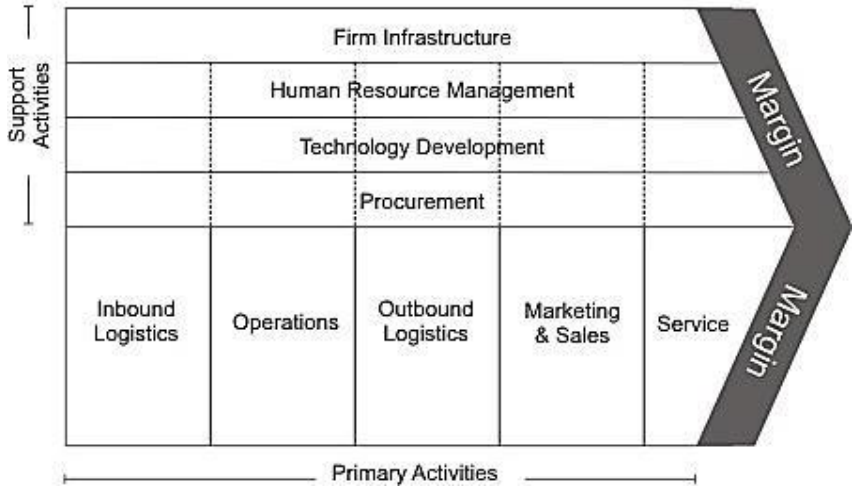

Fig. 2: Value Chain Model
Source: Porter (1986)

After considering the Value Chain Model, Kotler & Keller (2006) describes the strategic planning process, which consists of three phases: Planning, Implementation and Control (Figure 3). The planning process follows a hierarchy: corporation, division, business and product planning. At this stage, corporate mission, vision and values are defined, as well as the firm business - including the business model in which the company operates. It can be designed by product (e.g., sale of air conditioners) or market (e.g. provision of residential climate control). In this step, the operational units or business units are also defined if the company is large Kotler & Keller (2006). Strategic planning for BUs proposed by authors is show in Figure 03.

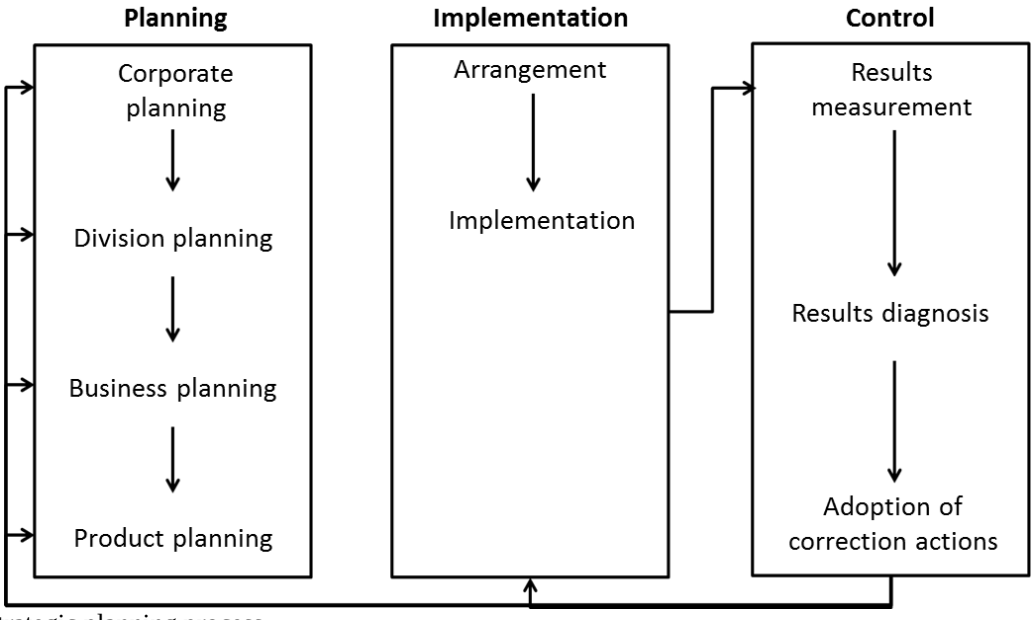

Fig.3: Strategic planning process.
Source: Kotler & Keller (2006)

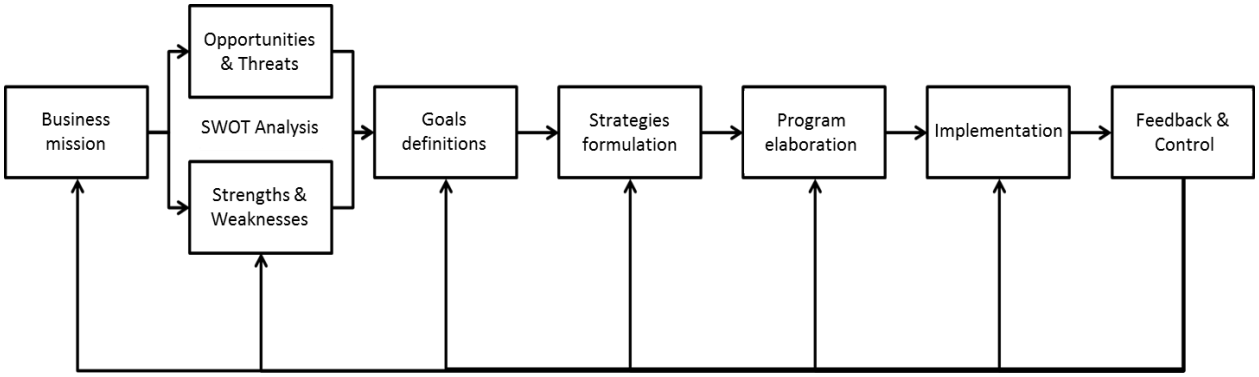

Fig.4: Strategic planning of business units.
Source: Kotler & Keller (2006)

The elements presented in Figure 04 are the processes for definition of each business unit strategy, always guided by corporate strategy (Kotler & Keller, 2006). The authors start the process with the discussion and definition of the business unit mission. According to the authors, each business unit should have its own mission statement inserted in the corporate mission. Based on it, the SWOT is to be conducted, analyzing the external environment (opportunities and threats), as already put by Ansoff (1965), as well as the internal environment (strengths and weaknesses). With the SWOT analysis in hand, the authors suggest the definition of "goals in terms of magnitude and deadline" (Kotler & Keller, 2006). Then comes the process of strategy formulation. According to them, while goals describe what the organization wants to achieve, strategies are the means to achieve these goals.

Finally, the business unit should develop an implementation plan and prepare detailed support programs Kotler & Keller (2006), as well as establish methods of feedback and control. According to the authors, during the strategy implementation, the company should monitor partial results and new relevant events in internal and external environments. It allows the company to react to market changes and, if necessary, revise plans, strategies, and objectives (Kotler & Keller, 2006).

3. Research Method

First, the study is based on a literature research to describe the planning processes. According to Gil (2010), this method makes use of published material, such as books, journals, theses, dissertations, etc. Furthermore the paper presents an action research, in which the research is closely linked to an action or problem-solving (Gil, 2010). In this case, the problem studied was the design of planning process for 2013 in the Institute of Technological Research, one of the most relevant research institutes in Brazil.

The methodology of data collection used was the participant observation, a research and information gathering technique, in which the researcher becomes part of the observed environment and therefore participates in the studied phenomenon. In this type of research, the value is in the richness, uniqueness and depth of the acquired observations (Martins & Theóphilo, 2009). To complement the literature research and participant observation, additional internal documents were also consulted, as indicated by (Martins & Theóphilo, 2009).

4. Results and Discussion

4.1 Culture and behavior

The organizational culture observed in IPT is very similar to that of a University. The research, as core activity, is often more valued by the researcher than by customers themselves. However, IPT must have revenue from customers to finance their operations, since the resources for the operation of the Institute come from project development and services provision to the industrial and public sectors, which is complemented by budget allocation of São Paulo State Government. The intensity of this culture focused on research varies between TC - there are examples of TC totally focused on the customer, while there is other that have large number of academic publications and patents, but often fail to turn this knowledge into revenue created for the Institute.

IPT faces a constant challenge, since each TC operates as an independent firm, with their own technical competences and, therefore, their specific service portfolio and market. It makes coordinated strategic initiatives more difficult to operationalize, because it is not easy to get to solutions that are suitable to all TC. This multifaceted characteristic, on the other hand, enables the institute to conduct multidisciplinary projects, which can be considered a relevant competitive advantage before the market, offering a more complete and effective solution to the customer's needs.

IPT long term success is mainly due to the technical knowledge of the researchers, whose recognition is many times spread not only in Brazil, but also internationally. So, excellence in the delivered services is expected by the customers, who receive sometimes even more than what was initially defined in the project scope. The research experience and long term relationship to the institution (some more than 30 years) is a strong characteristic of IPT. It consolidates and promotes developments in several research lines. At the same time, since many researchers have already experienced some frustrating institutional management initiatives, the institution suffers at some cases reduced motivation for this kind of activities.

Most of the leaders in IPT (laboratories chief, TC director and executive directors) are senior researchers, with strong technical knowledge, years of experience to IPT, but many times without formal management scholarship. Meanwhile, the close relationship between IPT employees enhances a coordination based on informal mechanisms. These relationships promote an organizational environment, which contributes to employee retention in the institution, to knowledge transfer between more experienced and new researches, among other benefits.

4.2 Planning process for IPT business units of 2013

Early in the second half of 2012, the Business & Planning support area was asked to start designing the Business Plan 2013 together with the presidential advisory. To draw the process to be applied to the BP 2013, the methodology of Strategic Planning Business Unit as described by Kotler & Keller (2006) was used. The process was designed to be applied in each of the IPT laboratories, so that the strategy of each TC could be reached. As mentioned, the process was inspired by the methodology compiled by Kotler & Keller (2006). Figure 05 summarizes the methodology applied to IPT context.

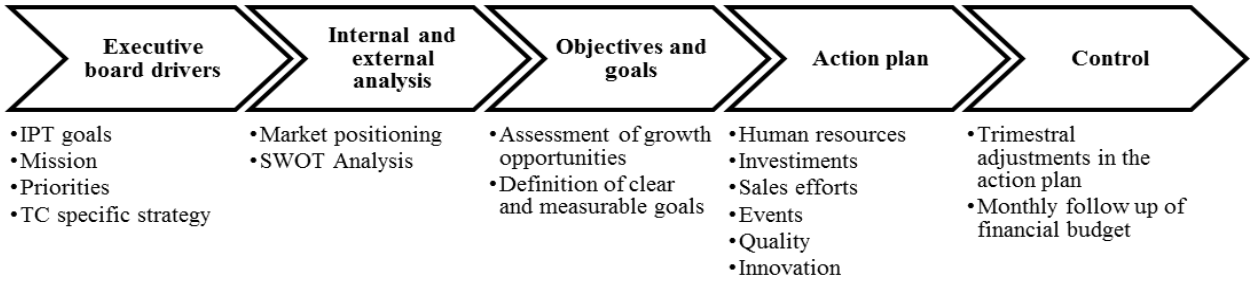

Fig.5: Planning process for IPT business units of 2013
Source: the authors.

First, the Executive Board provides the TC guidelines that should be followed in planning process of each business unit for the next year. In the case of BP 2013, the Board presented its guidelines together with the kickoff of the methodology and tools for the planning process. These guidelines are the basis for the business units to plan their activities according to the priorities, objectives and overall goals of the Institute. Also falls in this category are statements of mission, vision and values of IPT.

With the guidelines in hand, each TC establishes its plan for the following year, considering their internal and external analysis and resulting in a review of their market position and a SWOT analysis. This analysis is discussed in more detail later, when Market Positioning is discussed.

Then the BUs defines the objectives and goals for next year. These goals should take into account the growth opportunities identified in the previous stage. The recommendation is that the goals should be clear and measurable. The process then results in an action plan, in which the TC must specify in detail the actions that will be taken in the next year to achieve the established goals and objectives. Finally, the control of the plan takes over the planning year, to allow adjustments of the plan, as well as follow up of the proposed actions, objectives and targets.

4.3 Market positioning

As an approach to the positioning of each BU market strategy, the concept of Value Chain Porter (1986) was applied in the 2013 Strategic Planning IPT. In IPT, the generation of value of IPT was divided into four stages:

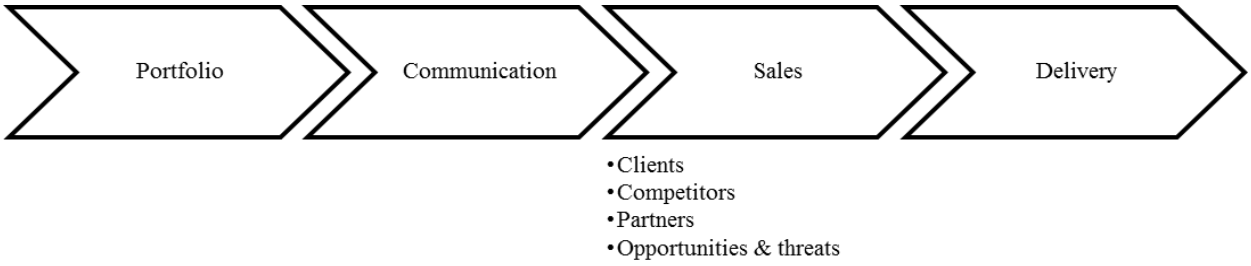

Fig.6: IPT's Value Generation Model
Source: the authors

Each stage was turned into a question that should be answered by managers of BUs, with the support of a tool developed for the process (Figure 06). The following items describe each stage, as well as its questions and results presentation.

4.3.1 Portfolio

At this stage, the main question to be answered by the BUs is: "What we offer to our customers?" The analysis is done invitation to debate the portfolio of services that each Technology Center offers the market is discussed between BU (both researchers and management) and Planning and Business Coordination. At this analysis, the services offered to the market should be described, which will be analyzed one by one according to the following aspects: Client Need and Market attended, Technological Activity, Participation in sales of BU, Strategic importance to BU, Main Bottleneck, Interaction with other BUs and Critical Analysis of any point who affects services performance.

The first two information shows attended markets and the need met with each of the services. More than compiling a list, these questions invite researchers and collaborators from each laboratory for reflection. The idea is to demonstrate both the board as the body of researchers, what is known and not known about markets and customers IPT.

Technological Activity field discriminates which category of services fits in each item of portfolio. These categories are pre-defined according to the IPT project management system. The services can be classified into (acronyms keep its original spelling, in Brazilian Portuguese): (1) CEAC - Calibration, Testing & Current Analysis; (2) CL - Laboratory Improvement; (3) EE - Specialized Tests; (4) ET - Economics and Technology; (5) P & D & I - Research, Development and Innovation; (6) PL – Technical reports; (7) PTI - Projects in Information Technology; (8) ST - Technological Services; (9) TD - Training and Dissemination.

Participation and Strategic Relevance fields should be considered together. The first, given in percentage, reveals the weight of each item in the revenue of the lab. The second shows the services that are provided in accordance with a strategic guideline as to ensure a market, provide complementary to other services portfolio, etc. Thus, there may be services with low income but can't be removed from the portfolio for some reason (regulatory, for example) to continue serving a market.

Main bottleneck field shows that impairs the growth of that service in terms of strategic importance and billing. The bottlenecks were defined as Market, People and Machinery and Equipment categories. Market encompasses aspects such as seasonality, lack of demand, etc. People bottleneck are related to training, absence of labor, etc. Machinery and Equipment refers to the physical infrastructure installed in the laboratory. Separating multidisciplinary of services, BUs (also called Income & Expenses Centers – CRD, in Brazilian Portuguese acronym) report interactions with another CRDs. Thus, the institution can know and work on encouraging synergy between laboratories.

Finally, the Critical Analysis invites the researcher to analyze all these information that have been raised in order to suggest improvements. These suggestions will be used later, when we describe the development of Objectives, Targets and Actions.

4.3.2 Communication

At this stage, the way that laboratories communicate with their audiences is evaluated. The audience was divided into Actual Customers, Potential Customers, Universities, Schools and Society. First two (Customers), were divided into Public and Private. The researchers are asked to explain what actions are taken and which public these communication actions affect. The actions were defined as: (1) Presentations at Events; (2) Distribution of flyers; (3) Fairs (as exhibitors); (4) Direct mail; (5) Material on website; (6) Exposure in media; (7) Provide seminars and courses; (8) Participation in conferences; (9) Participation in business events; (10) Production of graphic material; (11) Publication of papers.

CRDs then report what they usually do (based on 2011) and which audiences such actions reach. A detail field allows you to provide specificities of cases. Finally, the BUs respondent is asked to describe what the perceived consequences by each action.

4.3.3 Sales

The information from sales is also fulfilled based on the items contained in the Portfolio. Each service will have an individual analysis. First, customers are analyzed. The BUs are invited to meet the market for each service offered, in order to meet the main purchaser of the service of IPT and compare it with the main buyer of this service on the market - even if it is purchased from a competitor. The comparison gives the lab notion of what clients are strong in the market and have not yet been conquered by the IPT.

Then competitors are evaluated. For each service, main competitors are listed, and the strong one is appointed in a separate field. In relation to the strongest competitor, the researchers are invited to list strengths and weaknesses of IPT, as a first exercise to a SWOT analysis. Another aspect of sales is that there are partners in providing each service. If partners - institutions that provide the service in conjunction with the IPT in a complementary way - they are highlighted. If not, the researcher is invited to speculate what possible partners to provide each service of CRD's portfolio.

Finally, the second part of SWOT is performed. For each attended market (among the featured markets of portfolio analysis), BUs should perform a study of Threats and Opportunities. A "Perspective market growth" field measures the sentiment of the head of the laboratory about behavior of each market for 2013, a prediction, which may be expansion, stability or retraction.

4.3.4 Delivery

During discussions with researchers and consultants, a list of service competitiveness factors was built. These factors are those valued by customers IPT at the time of the purchase decision and can vary in importance between the different markets served. A matrix was created to analyze the delivery of services to customers of each laboratory, in order to compare the performance with the importance given by customers for each factors. Box 01 illustrates the array. Blanks are filled with numbers from 1 to 5, 1 being the lowest and 5 the highest rate for each dimension.

Dimension	Importance	Performance
Quality		
Deadline		
Reliability		
Price		
On-time delivery		
Scope		
Flexibility		

Box 01: IPT's Competitiveness Factors Matrix
Source: the authors

These factors were conceptualized as follows: (1) Quality - Fulfillment of standards of performance of service; (2) Deadline - Ability to pledge terms compatible with the market; (3) Reliability - Delivery unquestionable results; (4) Price - Practice comparable prices with market; (5) On-time delivery - Compliance with the promised deadlines; (6) Scope - Strict delivery to the extent customer demand; (7) Adaptability - Personalization of services to better meet customer needs.

Thus, BUs can identify which services are delivering in line with customer expectations and what are the overfilling or underfilling clients expectations in order to important factors for analyzed markets. To illustrate, consider the following situation: Customers of a particular BU greatly value the factor "Price", but sub value factor "Deadline". If the BU delivers a price within the customer's expectations, but suffers a lot to accomplish "deadline" factor, will not be as big a problem as if the situation were reversed: if the price out the expected standards by the customer, promise a short term to deliver service there won't ease the situation.

4.4 Objectives and goals

Made the analysis of market positioning, the process goes to the determination of objectives and goals. Based on the considerations made during the previous steps, laboratories should stipulate the desired future position at the end of 2013 as well as its metrics.

Kotler & Keller (2006) state that the goals are the objectives set in terms of scope and duration. Likewise, to this process was defined that the objectives set should show the desired future position, without stipulating numbers and deadlines. The goals related to each of the objectives are indicators that the goal was reached. The goals should be clear, measurable and display numbers and deadlines. It is through them that the head of the laboratory will have clarity about the total or partial achievement of certain goals based on the situation in the previous section.

Later, in the Action Plan, each of the proposed actions should be tied to a goal. This point is discussed further in the next section. Figure 07 illustrates the logical linkage between Objectives, Goals and Actions.

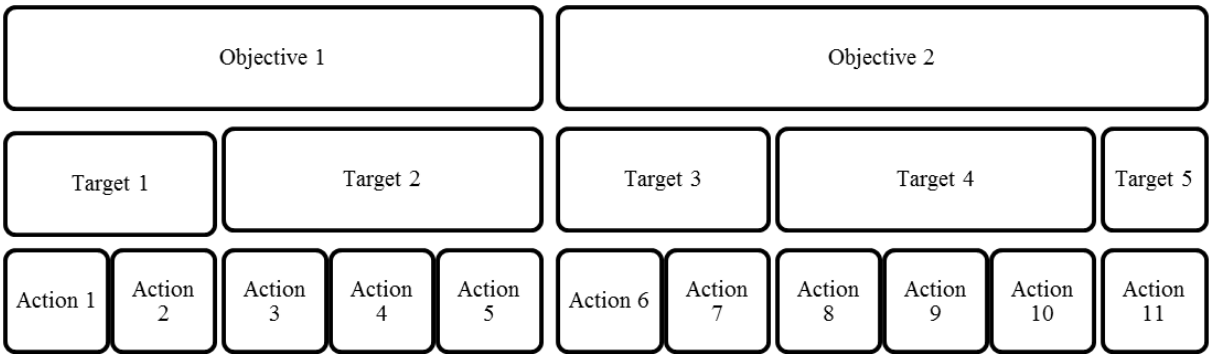

Fig. 7 – logical linkage between objectives, goals and actions
Source: the authors

To prepare the objectives, the head of BU is asked to list the observations he thinks basis for one of the goals for 2013. These observations, as previously stated, are performed under the IPT general planning guidelines and also in the center of each technological strategy, determined by the director of each center. Therefore, each objective will have a justification based on Market Positioning, Top Management Guidelines and Technology Centre Strategy, and will be translatable into clear, measurable and straight goals in order to facilitate the Control step, held throughout 2013.

4.5 Action Plan

The final step in the strategic planning process is the construction of the Action Plan. Laboratories, defining objectives and goals now should complement the "flight plan" with the path will be used to reach the destination. Thus, the actions listed in this stage must be disclosed in detail. In the Action Plan, each CRD suppose, first, that goal previously discriminated action will be linked, and then describe the action. Then must choose which category is related with the Box 02 itemizes categories and their groupings.

Actions	***Area***
Business events participation	Commercialization
Visit to customers	Commercialization
Material on site	Communication
Congress participation	Communication
Publications	Communication
Other actions (C)	Communication
Changes in organizational structure	Management
Acquisition of equipment	Infrastructure
Divesture	Infrastructure
Works	Infrastructure
Other actions (I)	Infrastructure
Promo materials	Marketing
Projects with governmental funding agency	Projects
EMBRAPII	Projects
Internal R&D projects	Projects

Actions	*Area*
Academy activities	HR
Hiring teachers / doctors fellows / post doctors	HR
Hiring approved in public contest	HR
Mentoring	HR
Other actions (HR)	HR
Researchers exchange	HR
Internal and external training	HR
Implementation of IT systems	IT
Other actions not covered	Other

Box 02: Actions and areas responsible for the implementation of the Action Plan
Source: the authors

The categories were defined during the meetings to design strategic planning from the actions that the Office of the Presidency hoped to receive as proposals from Technological Centers.

4.6. Innovation Goals, Impact on Society e Multidisciplinary Actions

In addition to the plan of actions to verify the strategy of each Technology Center, Top Management requested that the Business and Planning Coordination add to process other considerations relevant to the overall strategy of IPT: Innovation Goals and Impact on Society. Innovation Goals followed the same structure as the last years of Strategic Planning. There were no significant changes. Researchers must set goals for innovation indicators Institute as Table 01 illustrates.

Goal	**1º Trim 2013**	**2º Trim 2013**	**3º Trim 2013**	**4º Trim 2013**
Publications (papers on journals/ proceedings)				
Patents filed				
Innovative procedures and tests				
New processes in Quality Management System				
R&D revenues	R$	R$	R$	R$

Table 01: IPT's Innovation Indicators
Source: elaborated by the author from the data of the survey

The evaluation of Impacts on Society demanded reflections on the impact that the performance of each laboratory has had on society, both in terms of increased productivity of industry or BU clients, patents have resulted in products on the market, etc. The format of the evaluation was a free text.

4.7 Tool and planning strategy

The planning tool was built in spreadsheet format with a tab for each stage of Positioning in the Market. We tried to automate all possible tasks to avoid repeated information. In fields where there was a list of predetermined items, a drop- down menu has been added with the possible answers. Due to these features, the tool could only run on version 2010 or newer MS Excel ®.

Sought to comply with the format already established in previous versions of the IPT process, to minimize the impact of proposed process changes on the target audience. The diffusion of the planning process began with a meeting convened by the IPT President. At this meeting the Business and Planning Coordination team introduced the concept of the value chain and how the procedure would be performed.

To meet all TCs, the Business and Planning Coordination team, in conjunction with the Office of the Presidency, divided into groups to visit each of the centers and explain the process in detail. Each TC was then assigned to a focal point: a person available for direct contact for questions, comments and suggestions about the process.

During the meetings, adjustments were made in order to better meet the peculiarities of each center tool. The main objective of this approach was overcome mistrust of some researchers and directors of the Centre, which, due to the feeling that the earlier cases were not converted into improvements in the operation, offered resistance to the implementation of the PN 2013. At least three meetings were held in each center.

It was also developed a database in MS Access ® to consolidate all responses and assist in the analysis and presentation of data.

4.8 Difficulties encountered

The difficulties encountered followed those raised by Steiner (1979): it was necessary to overcome the barrier of distrust of researchers in the process that led to a compromise, in general, too low to successful planning. Moreover, the succession process of the institution through the implementation of the Business Plan procedure led to a situation of lack of support from senior management.

The mistrust of center directors and heads of lab on the process was expected and the planning team tried to work this aspect in positively way. The diffusion work had to be focused on argument that this process served as a management tool for managers own. If, on the one hand, it brought motivation for a significant portion of those involved in the process (thus solving the problem), a minority considered this as a reason to do the least possible effort, claiming that this exercise wasn't necessary for them. So, in these cases, the obtained information about BU strategy reached lowest level as possible.

The greatest difficulty, however, was that during the implementation of the BP 2013 was the succession process on the board of the Institute. The basic premises of the process were provided by a board, but the implementation and monitoring would be carried out by another. The BP 2013 thus far received little attention from the new board. As the literature has shown and discussed Kotler & Keller (2006), Mintzberg (1994a, 1994b), and Steiner (1979) the support of senior management is critical in this process.

5. Final Considerations

This study is delimited to the design of the process and does not discuss the results obtained with the tool presented. However, the scope of the paper covers the process of creation and diffusion of the planning process. During implementation process in 2012, the not satisfying perception with previous planning processes becomes clear in the case studied.

During the interviews for the design and implementation process of annual planning, the bureaucracy (and slowness) of IPT processes in general was pointed out. This aspect was already raised in 1975 by Steiner (1979) and commented by Mintzberg (1994a, 1994b), that indicate a planning process focused on developing a "strategic programming" as the reason for this result.

Based on this corporate context, it is essential that the planning process reaches the expectations of researchers in order to solve the problems reported year after year. In interviews during the diffusion process, the complaint was recurrent in most TC´s visited. The perception of distrust in the process and the resulting lack of motivation to implement the procedure suggested can be diminished, once the researches see a systematic support of the Executive Board to execute the proposed plan. Again, these factors are the same raised by Steiner (1979) and Mintzberg (1994a). On the other hand, a planning process conducted consistently, resulting in a robust, comprehensive and market-based positioning plan, is more likely to result in a consistent action plan to be supported by the Board.

It is necessary, however, that all spheres of the Institute are involved in order to reach a successful planning process. Executive Board should trust the managers of each center, who should trust the decision of the Executive Directors. This trust relationship must be maintained by both parties in order to not miss commitment in planning and implementation of each Business Unit plan.

For the next IPT strategic planning processes, it is critical that it is started still in the first semester of the year. It is proposed that a debate about the goals of the Institute is conducted, as suggested by Mintzberg (1994b). The mission, vision and values of an institution should not only serve as a suggestion of conduct, but should be internalized by all actors in the company. As Kotler & Keller (2006), these statements should guide all actions of the Institute.

Further studies could be developed in the sense of evaluating the results of the planning process in IPT of 2013, identifying critics and suggestions for the next round of annual planning process. This debate can be useful for Business Units planning process in Public Institutions, with potential for contributions also in the private sector.

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