



ESCOLA
POLITÀCNICA SUPERIOR
UNIVERSITAT DE LLEIDA

CHAPTER 4: THE TECHNOLOGY PLAN

Master's Degree in Informatics Engineering

POLYTECHNIC SCHOOL

University of Lleida



Universitat de Lleida
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SECTION 4.1:

The Technology Plan

Introduction:

- Technology has become a key factor in the creation of value and competitive advantage in companies and their products and services.
- The tool to ensure that the use of these technologies are adjusted to the objectives, strategies and general strategic plan and prevent them become a factor of more cost and brake to the creation of value and competitive advantage (which could be happen ...) is the Technology Plan.

SECTION 4.1:

The Technology Plan

What is a Technology Plan:

- The Technology Plan is a planning technique to give support, in terms of ICT, for the Strategic Plan.
- Allows you align the technological solutions with the Strategic Plan, goals, milestones and strategies of the company.
- Given the current strategic importance of ICT in the value chain, the creation of competitive advantage and the differentiation must be a fundamental part of the Strategic Plan of the company, becoming a specific discipline within the Domain of Strategic Plan.

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The Technology Plan

What is a Technology Plan:

- A Technology Plan can receive numerous denominations but always, with small variants, it refers to the same concept:
 - Master Plan Systems or Plan of Information Systems
 - Strategic Plan of Systems or Information System Strategic Planning
- A Technology Plan must provide to the company a correct assessment of the current state of the company's computer systems, the requirements that the corporation requires and must allow the identification, planning, implantation and exploitation of the appropriate technologies in an immediate future.

SECTION 4.1:

The Technology Plan

Considerations regarding The Technology Plan:

- It must be perfectly aligned with the Strategic Plan, goals, milestones and strategies of the company.
- Given the speed of technology change, its application to business management and innovation in organizations, in general it is difficult for a computer system plan to be valid beyond 3 to 5 years, and it is recommended to check it and update it annually.
- Fulfilling the objectives must be realistic about the real possibilities of this company. It should not end up being an unprofitable cost or an added problem ...
- The costs, benefits and risks in each one of the proposals must be very present.



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The Technology Plan

Considerations regarding The Technology Plan:

- It must be designed and thinking to provide value, competitive advantage and differentiation. Remember when a process or activity does not contribute value, you must study:
 - Eliminate
 - Transform
 - Outsource
- The Technology Plan must to involve and contemplate the whole organization, especially the executive management, the intermediate management and the key personnel of the departments.



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Considerations regarding The Technology Plan:

- Technology Plans have very risky to be excessively rigid, unadaptable, if they are not followed by periodic verification guidelines.
- It is essential that they be adaptable, contemplate possible contingencies and facilitates to be changed.

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The Technology Plan

Why do a Technology Plan:

- Effective ICT asset management, a critical factor for the organization and which usually means an important cost.
- Identification of opportunities to use the technology to increase the competitive advantage and the value of the processes and of the business in general.
- Better planning of information flow and different processes.
- An efficient and effective allocation of ICT resources.
- Alignment between the direction of ICT services and the priorities at the company's management.

SECTION 4.1:

The Technology Plan

Why do a Technology Plan:

- Facilitate the interrelation of our value chain with the value chains of suppliers, distribution and clients, obtaining mutual benefits in competitive advantage and value.
- Improvement of communication and the relationship between ICT services and the rest of the company.
- Reduce the effort and money required throughout the lifecycle of ICT systems and solutions.

SECTION 4.1:

The Technology Plan

Alignment Technology Plan, Strategic Plan and Management company:



Competitive Advantage / Value / Efficiency

SECTION 4.1:

The Technology Plan

- Typical symptoms of poor alignment are:
 - Lack of coordination between the company and ICT services.
 - Systems and ICT solutions that do not meet the needs of the company.
 - ICT systems and solutions that can not respond quickly to business demands.
 - Users dissatisfied with ICT services.
 - Canceled projects.
 - Redundant projects.
 - Projects that do not offer the desired value.

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The Technology Plan

Process of defining a Technology Plan:

- The preparation of a Technology Plan, given its specific nature, is very different from that of a general Strategic Plan, but there are very similar concepts and strategies.
- Identify where we are, both internally and externally:
 - What is the strategic plan of our company?
 - Which are your goals and strategies?
 - How currently we are technologically?
 - What is the technological situation of our sector?
 - What is the expected technological evolution?
 - How is our competition technologically?
 - What can we do and improve?

SECTION 4.1:

The Technology Plan

Process of defining a Technology Plan:

- Identify where we want to be in the future.
 - What is the vision and mission of our company?
 - Where should we go according to the Strategic Plan?
 - What scenarios can we predict?
 - What systems and solutions will we need in each of these scenarios?
 - What technological gap do we have between where we are and where do we have to go?
 - What systems and solutions will we need to cover this gap? And in which moment?
 - Where do we want to be in the next futures and how to get there?



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The Technology Plan

Process of defining a Technology Plan:

- Basically, the preparation of a Technology Plan has four phases:
 - Vision
 - Analysis
 - Management
 - Recommendations

SECTION 4.2:

The Technology Plan

Vision:

- At this point, we start the development project plan and start the planning process.
- In this phase, the communication and alignment with the management of the company is very important, especially regarding the aspects of vision, values, goals, milestones and priorities, as well as "what is expected to achieve" with this Plan of Technologies.
- Much of the success and efficiency in the development of the Plan will depend on the human resources that are dedicated to its development, its identification, its skills and roles, etc. It is at this stage when we will make this selection.



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The Technology Plan

Vision:

Tasks to be done in this phase:

- Initialization of the project
 - Set scope and goals.
 - Identify resources, roles, responsibilities.
 - Interviews with participants and involved people.
 - Fix a work plan and deliverables that we will have to deliver.
 - Preparation of templates to be delivered.
 - Establish projects, communication, etc.
 - Check and confirm the project plan.

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The Technology Plan

Vision:

Tasks to be done in this phase:

- Check the situation and the vision of the company
 - Check the documentation regarding the company.
 - Check and confirm your Strategic Plan, Vision, Mission Values, objectives.
 - Structure and organizational chart.
 - Survey to the Management.
 - Check priorities.
 - Survey the personnel involved.
 - Document the results of the surveys and analysis.
 - Check and confirm the project plan.

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The Technology Plan

Vision:

Tasks to be done in this phase:

- Documentation and concretion of the analysis of the company
 - Definitive documentation of the situation of the company.
 - Definitive documentation of your Strategic Plan, Vision, Mission Values, objectives.
 - Analyze and document technological trends.
 - Analyze and document trends in the production sector and/or services involved.
 - Analyze and document customer requirements.
 - Analyze and document strengths, weaknesses, opportunities and threats.
 - Analyze and document the impact of technologies in the company.
 - Check the "understanding of the situation".

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Analysis:

- In this phase, we focus on the study and documentation in the ICT environment of the company itself.
- The analysis should include the systems environment, voice and data communications, corporate communications, tools and solutions, PCs and workplace environments, mobility solutions, suppliers and regular consultants.
- All the processes where the ICT and the protocols used by the ICT services are involved must be also reviewed.
- The expenses must also be reviewed, carefully analyzing the costs of each technology, tool, service, etc.

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The Technology Plan

Analysis:

- It is also essential to analyze the human resources of ICT services and their responsibilities and workloads at the level of people as well as of each of the solutions tools, etc.
- It will also be necessary to review the external ICT trends and identify how the sector works.
- Study and analyze competitors and determine how ICTs are used by them. They compare our ICT spending with that of the rest of the sector.
- It is important to survey both the ICT service staff and all the staff that use them as a user.

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The Technology Plan

Analysis:

- Based on all these analysis, we can determine the strengths, weaknesses, opportunities and threats of our ICT.
- At the end of this phase, we will have to analyze possible scenarios and develop recommendations and proposals for solutions and alternatives.
- Curiously, at this stage, one of the sentence that is most often collected in the surveys is:
 - "We do right this because it has always been done in this way"
- This is a symptom that we must "make changes ..."

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Analysis

Tasks to be done in this phase:

- Study ICT situation in the company
 - Check the company's IT documentation, ICT infrastructures, tools and solutions.
 - Revision of protocols used in ICT services.
 - Organization and organization chart of ICT services.
 - Detailed ICT costs.
 - Check distribution of work positions.
 - Surveys to ICT staff and users.
 - Analysis and documentation of the surveys.
 - Documentation of the ICT situation of the company.
- Check and confirm the study of the ICT situation.

SECTION 4.2:

The Technology Plan

Analysis

Tasks to be done in this phase:

- Analysis of the ICT situation
 - General ICT trends and its "behavior" in the sector.
 - Study ICT used in the competition.
 - Check the information needs and the context of data.
 - Check the company's processes.
 - Check the use of ICT applications and solutions in the company.
 - Check the requirements for use and its availability.
 - Study the possible "gaps".
 - Develop the ICT SWOT in the company.
- Analyze possible scenarios.
- Develop control panels and evaluate the ICT situation, including HRM.
- Check and confirm the analysis of the ICT situation.



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The Technology Plan

Analysis

Tasks to be done in this phase:

- Development of scenarios, recommendations, solutions and alternatives.
 - Develop recommendations regarding applications and solutions.
 - Develop recommendations regarding infrastructures.
 - Develop recommendations regarding the processes.
 - Develop recommendations regarding protocols.
 - Develop recommendations regarding organizational and organizational chart improvements.
 - Check and confirm the recommendations.

SECTION 4.2:

The Technology Plan

Management

- At this point, is where we determine and set the way ICTs can help the company, how it will help achieve the goals, how it will generate value and competitive advantage.
- In this phase, we need to determine the specific projects that will be addressed, the infrastructures that we will need and what architecture will have. Also, what changes and substitutions we should address, how ICTs will be structured, what economic and human resources will need to be determined at this stage.
- At this point is, also, where we will also determine which services we will use for outsourcing or other alternative options. Also, we should mark the priorities of the different projects and the implementation of infrastructures.



SECTION 4.2:

The Technology Plan

Management

Tasks to be done in this phase:

- Development vision and management ICT
 - Development of ICT Vision and ICT Mission.
 - Development of ICT goals and strategies.
 - Determinate of the integral control panel and the metrics.
 - Check and confirm the vision and management ICT.

SECTION 4.2:

The Technology Plan

Management

Tasks to be done in this phase:

- Development of the Technology Plan
 - Develop the plan of applications and solutions.
 - Develop the infrastructure plan.
 - Develop the process of management and management of ICT services.
 - Check process prioritization.
 - Check and confirm the Technology Plan.

SECTION 4.2:

The Technology Plan

Management

Tasks to be done in this phase:

- Identification of ICT projects
 - Identify the ICT projects of applications and solutions.
 - Identify ICT infrastructures projects.
 - Identify processes ICT projects.
 - Identify organizational ICT projects.
 - Make an estimate ICT costs.
 - Identify the benefits for the company or corporation.
 - Prioritize projects.
- Check and confirm the Technology Plan and the prioritization of projects.

SECTION 4.2:

The Technology Plan

Recommendations

- At this stage, we document the detailed roadmap for the years that the Technology Plan will be. We will summarize the costs, time and resources required.
- Assessment metrics and methodologies will be useful for validating estimates, monitoring of forecasts and compliance with the Plan.
- If there are multiple options, we will identify the various options, as well as the advantages and disadvantages of each option.
- We will determine the appropriate recommendations along with an analysis of the return on investment. We will also be able to identify the impact on the organization.

SECTION 4.2:

The Technology Plan

Recommendations

- It is also important to analyze the risks and make forecasts and proposals to mitigate them.
- It's important, the writing or development of the "business case", where the actions, benefits and commercial impact of the company are clearly explained in order to facilitate their understanding and approval by management of the company.
- Important steps are also the elaboration of the communication plan, a key element to ensure a correct compliance with the Plan and guarantee a continuous process of revision and updating of the Plan: adapting to technological changes, as well as those of the market or those of the own company.



SECTION 4.2:

The Technology Plan

Recommendations

Tasks to be done in this phase:

- Roadmap
 - Detailed documentation of the roadmap.
 - Summary of costs and financing.
 - Study and presentation of the impact on the company.
 - Identify risks, propose risk mitigation strategies, evaluate the strength in the face of risks and contingencies.
 - Check and confirmation of the roadmap.

SECTION 4.2:

The Technology Plan

Recommendations

Tasks to be done in this phase:

- Development of the "business case"
 - Presentation of the benefits and commercial impact for the company (Business case).
 - Development of the communication plan.
 - Development of a process of permanent review and planning.
 - Presentation to the Management.
 - Check and confirm of the "business case".

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The Technology Plan

Recommendations

Tasks to be done in this phase:

- Communication plan
 - Closure of the final document of the Technology Plan.
 - Develop the presentation of the Plan.
 - Presentation and delivery of the Technology Plan.

SECTION 4.3:

The Technology Plan

Contents and basic documentation of a Technology Plan

A typical structure of this document could be the following:

1. Executive summary
2. Current status of the organization
 - Vision and Mission
 - Strategic plan
 - Current situation
 - Direction
 - SWOT analysis



SECTION 4.3:

The Technology Plan

3. Business requirements for the information systems
 - ICT implications of the company and the sector
 - Key business requirements
 - Improvements in processes
4. Current status of information systems
 - Current applications and solutions
 - Technological infrastructure
 - ICT organization
 - Current processes
 - Current budget

SECTION 4.3:

The Technology Plan

5. State of the ICT industry and competition
 - Trends and evolution of the ICTs foreseen
 - State and situation sector and ICT companies
 - ICT profile in its competition
 - Benchmark of the sector and ICT solutions
 - Benchmark with the competition
6. ICT evaluation
 - Strengths
 - Weaknesses
 - Opportunities
 - Threats
 - Results (Scorecard)
 - Recommendations



SECTION 4.3:

The Technology Plan

7. Requirements Corporate Management

- Vision and mission
- Targets
- Strategies
- Results and metrics
- Prioritization of processes

8. ICT services

- Business applications
- Other applications
- Technical infrastructure
- Infrastructure of communications
- Organization, Staff
- Processes
- Goals and strategies



SECTION 4.3:

The Technology Plan

9. Identification of opportunities for improvement
10. "Gap analysis"
 - Applications
 - Infrastructures
 - Communications
 - Organization, Staff
 - Processes
11. Implementation plan
 - Priorities
 - Projects
 - Roadmap
 - Costs, investments
 - Financial plan
 - Communication plan
 - Planning of the process

SECTION 4.3:

The Technology Plan

Summarizing:

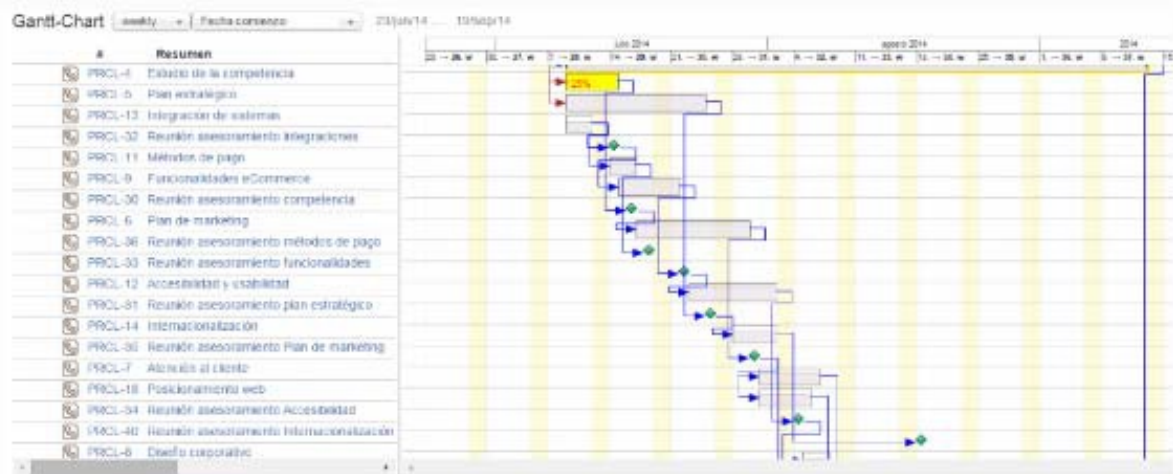
- For the correct development of the Technology Plan and in order to do so consistently, we should keep in mind the following steps or recommendations.
- Start out and keep in mind the alignment between the Technology Plan, the Strategic Plan and the Company's Management.
- Temporarily follow the four phases seen from:
 - Vision
 - Analysis
 - Management
 - Recommendations

SECTION 4.3:

The Technology Plan

Summarizing:

- Always consider that the Plan is a living document and is better developed through iteration.
- The use of planning tools, Gantt charts, collaborative work tools, etc. They help a lot in the phase of definition and elaboration of the Plan as well as in its implementation and execution.





SECTION 4.3:

The Technology Plan

Summarizing:

- We have commented that the validity of a Technology Plan is short (2-3 years maximum), therefore the planning process should not be a time-consuming process and its execution should be immediate as soon as possible how it has been defined and approved.
- Several factors can significantly affect the duration of the planning process and we must take them into account:
 - Scope of the Plan
 - Level of detail
 - Staff involved and experience of it
 - Number of people consulted or surveyed
 - Implication of the entire organization (little involvement lengthens the process)
 - Methodology used



SECTION 4.3:

The Technology Plan

Summarizing:

- Remember that a Technology Plan must always be an open and adaptable processes and in which the results must be measured in a systematic manner.
- Remember that, finally, a Technology Plan is a tool that allows you to make decisions at the company's management in a key activity for it, such as technologies. Therefore, it must be a truly useful tool for this direction and to be able to meet the company's objectives.