ICT and Culture

"...to make a difference, not only in business but also in their communities"
Thomas J. Watson

University : Radboud University Nijmegen
Faculty : Faculty of Science, Mathematics and Computing Sciences
Institute : The Nijmegen Institute for Computing and information Sciences
Study : Information Sciences
Supervisor : dr. L. (Luca) Consoli
Referent : dr. P. (Patrick) van Bommel
Date : 19-10-2005
Name : Reinout Kuiper
Student number : 0354872
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Abstract

The purpose of this thesis is to investigate the possibility to develop a digital architecture for a new cultural initiative in The Netherlands that can provide a positive contribution to arts and culture. This is done in the context of the "Corporate Community Relations" strategy carried out by IBM. A part of the investigation has taken place in Milan where the foundation of the organisation IBM (Italy IBM Foundation) is involved in the development of initiatives that helps communities in need in the social, educational, and arts and culture area. On the base of one of these initiatives, a digital architecture has been developed for a new cultural ICT project in The Netherlands.

The "Dionys" project is an initiative developed by Italy IBM Foundation. This initiative is a information system where information can be found about theatres around the European and Mediterranean area. This is a project that can be adopted in a Dutch context with only minor adjustments. The digital architecture of this information system in The Netherlands is not focused on only theatres, but also on museums.

Important aspects in the digital architecture of the new project in The Netherlands are the business principles, rules and guidelines. Besides stakeholders, application and technological infrastructure become an important topic of the digital architecture.

Preface

This thesis is the result of the master research that I have carried out at the Radboud University Nijmegen under supervision of dr. Luca Consoli within a period of 8 months, from February until October. I chose to carry out a part of the research in Milan with the intention to finish the study Information Sciences.
Milan was chosen because IBM runs a foundation for this type of research projects, which is located in Milan.

I want to thank several people for helping me to achieve the results. Especially I would like to thank my supervisor dr. Luca Consoli for his assistance. I also would like to thank my other supervisor dr. Patrick van Bommel.
Lastly I would like to thank the following persons for their collaboration with this thesis: Warner Dijkhuizen (IBM NL), for his enthusiasm and for giving me the opportunity to do this research. Angelo Failla (Italy IBM Foundation), for giving me the opportunity to do a part of my research in Milan, and Anna Di Summa, Giovanni Basilico, Giovanni Soresi, Lavinia Galli, Marzia Coreggi, Morgana Stell, and Stefano Mazzotti, for their support and collaboration during my stay in Milan.

Reinout Kuiper, Nijmegen, October 11, 2005

Contents

Terminology

Cultural initiatives   all exhibitions of art in form of theatre performances, museum collections, etc.

Principles   directives aimed at supporting essential decisions in order to fulfil general demands.

Stakeholder   an individual or group with interests in the project and that can have influence on the design and on the progress of development of the project.

SWOT analysis   a strategic planning tool used to evaluate the Strengths, Weaknesses, Opportunities, and Threats involved in a project or in a business venture. Strengths and weaknesses are internal to an organization. Opportunities and threats originate from outside the organization. A SWOT analysis, usually performed early in the project development process, helps organizations evaluate the environmental factors and internal situation facing a project.[1]

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[1] http://en.wikipedia.org/wiki/SWOT_analysis

1.   Introduction

1.1   Historical background

In the past centuries there have been many changes as far as art and culture is produced, perceived and consumed; and example is the way in which people see and use entertainment events. This is of course also true in the Dutch context.

The first entertainment shows were shows with Greek actors around 550 years B.C. These players drove around with wagons in which they presented monologues and played different characters using different masks.[2]

In the old Middle Ages the content of the theatre scenes was always church-related. In the beginning these scenes were played mainly inside the church. But because there were many visitors who wanted to see the scenes, the scenes moved to the (church) squares.

Around the 9th century people started to drive through the country to play songs for the people. Generally these secular shows were much smaller than those being executed in the churches, because the individual artists did not have very much money.[3]
In this time people generally were not able to make long journeys. As a result most of the people were not able to leave their live- and workplace. It meant that if they wanted to see a scene, this was only possible when the scenes were played locally. In this time there were a lot of people who travelled to show the people their scenes. Therefore, the journeying artist became a common phenomenon.

In the twelfth and thirteenth century the evolution from religious themes to secular topics became more widespread, also thanks to the work of rhetoricians.

The period of re-inventing and re-interpreting the Greek-Roman civilisation has been labelled "Renaissance". It spans the 14th through 16th century. In this period people started to get interested in painting-[4], construction-[5] and sculpture[6], starting off in Italy and spreading through Europe over time.

Technology made giant steps in the 19th century. Because of these new technologies people could amuse themselves at home. Later, people could listen and watch the radio[7] and television for entertainment. In this time people started to become less and less dependent on geographic factors to amuse themselves.

Information technology has a very deep impact on cultural production. New forms of art are made possible by informatics (virtual art, multimediatic shows, etc.). The pace of

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[2] Broer, A. L. (1980). Het toneel door de eeuwen heen.
[3] http://www.literatuurgeschiedenis.nl/literatuurgeschiedenis.asp?ID=15
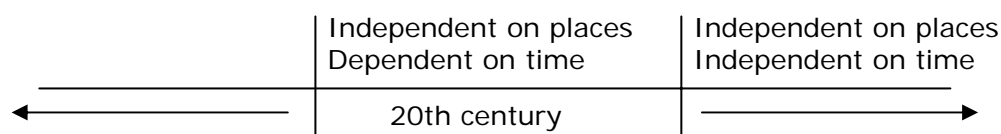[4] For example the painting Virgin of the Rocks by Leonardo da Vinci
[5] For example the theatre building Vicenza in Venice
[6] For example the sculpture Pietà by Michelangelo
[7] The first radio programme in The Netherlands was on 6 November 1919 presented by Hanso Schotanus à Steringa Idzerda

development of new technologies is speeding up. Entertainment opportunities for cultural events like theatres are also using these new technologies, which means they enhance their scenes. For example in the past a scene was played by a few people. Those people played several different roles. This meant that they had to change many times during the scenes.[8] Currently theatres have the opportunity to use technologies, like video and highlights, which give spectators the feeling that there are more players playing in the scene.

In the present the technology has great influence on the way how people entertain themselves in The Netherlands. Every Dutch citizen has the opportunity to watch television at any moment of the day. Presently a lot of the Dutch people have access to broadband internet. This offers for example the opportunity to watch programmes even if they have already been broadcasted.[9]

	Independent on places Dependent on time	Independent on places Independent on time
←	20th century	→

The figure summarizes the evolution of the dependence of people on space and time constraints as far as cultural involvement is concerned.
At this time people are not dependent anymore on the place and time to entertain themselves. There is a growing need for information in the cultural area. People have to know when and where some showing happens.

1.2   Company context

Thomas J. Watson[10] wanted to make a difference, not only in business but also in their communities. Therefore IBM started the strategy which is called by IBM "Corporate Community Relations" (CCR).[11] Corporate Community Relations[12] means that a company helps people to improve the quality of life for themselves and others by using its business resources.[13] Besides that, a company can encourage their employees to volunteer in activities which contribute to the solution of a community topic.[14] This strategy to benefit communities in need is also applied by other matured companies.[15] IBM wants to benefit communities in need in collaboration with these matured companies, government and not-for-profit organisations and uses her expertise in this area; for years IBM has been one of the greatest donor of devices, services and money for education and for not-for-profit organisations all over the world. These corporate community relations programmes are mainly focused on education, from the kindergarten to the university. With these projects IBM wants to show that ICT can be used for creating solutions that benefits

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[8] For example the play "Lanseloet van Denemerken"
[9] For example NOS-journal http://www.nos.nl/
[10] Thomas J. Watson founder of IBM
[11] Websites IBM Corporate Community Relations
http://www-5.ibm.com/nl/maatschappij/
http://www.ibm.com/ibm/ibmgives/
[12] Dr. Feenstra, D.W. (2003), The good, the bad, and the ugly.
[13] Kaptijn, M. & Wempe, J. (2003), De open onderneming.
[14] Rosenbluth, Hal F. and Peters, Diane McFerrin (1998), Good company.
[15] Example website "Jongeren en Techniek Netwerk Nederland"
http://www.jet-net.nl/

community issues. IBM chooses methods in which technological solutions are built in collaboration with community organisations for a specific issue on top of the donation of money, which is done only once. The purpose is to help people to enhance the quality of their own life and that of other people.

From its early years onwards the organization IBM invested in the quality of the community. At this moment IBM Worldwide corporate philanthropy spans the globe with diverse and sustained programs that support initiatives in education, workforce development and arts and culture to benefit communities in need.[16]

An example of one of these initiatives is the KidSmart computer.[17] This initiative is meant to help educating children in the kindergarten. A lot of these children do not have a computer available at home. These children therefore do not have the opportunity to get used to using a computer. Because of these computers children (age 3 until 7) can get used to using computers and at the same time the computers help them to enhance their communication- and language skills. There is a website for the parents and teachers of the children that includes support and training for the teachers.

This programme started for the first time in 1998 in America with the name 'KidSmart Early Learning Program'. Later this initiative has been carried out in Europe. On the 16th of January 2003 the kindergarten 't Klimhof in The Hague was the first school with a KidSmart computer in The Netherlands.

There are many other areas in which this kind of corporate strategy can (and has) been applied. A relevant example is the area of arts and culture.
In The Netherlands IBM is interested in extending their strategy corporate community relations by focusing it also on the Dutch culture. At this moment IBM NL only executes a few initiatives that help creating a solution for some cultural issues.[18] But before IBM NL will start with a substantial increase in the implementation of such initiatives in The Netherlands, they are interested in knowing how other countries apply similar initiatives that help to create a solution for some cultural issues. The purpose of this research is to come up with a proposal for a digital architecture of one initiative that could be applied in The Netherlands.

Italy is an example of a European country in which IBM is very active as far as the implementation of cultural activities is concerned. In Italy there is a foundation called "Italy IBM Foundation" that executes these initiatives. This foundation was founded in 1991. It has a considerable operative autonomy (it does not make part of the corporate structure of IBM) and has the opportunity to do more in the educational, social and cultural areas.

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[16] http://www.ibm.com/nl/maatschappij/
[17] http://www.kidsmartearlylearning.org/
[18] Example the initiative Hermitage

The Italian situation is in many aspects similar to the Dutch one: both are highly industrialized, Western countries, where culture plays a prominent role at many levels in society. Therefore, it is an interesting case study for a possible transfer of experiences to the Netherlands. In particular, the activities of the Italy IBM foundation are of paramount relevance.

1.3   Research aims

Based on the characterization of the situation above, we can formulate the following research question:

1.3.1 Research question

Is it possible, based on initiatives of IBM Milan that help in providing solutions for cultural topics in Italy, to come to a model for a digital architecture for the implementation of an initiative, which will provide a solution by using ICT for a cultural topic in The Netherlands?

1.3.2 Sub questions

1.)   What are the architecture-principles and objectives of IBM related to "Corporate Community Relations"?
2.)   Which model does Italy IBM Foundation use to implement initiatives?
3.)   Which are the initiatives that Italy IBM Foundation applies?
4.)   Is there an initiative that can be implemented in a comparable way in to The Netherlands?
    4a.)   Which are the goals and objectives of one of this initiative?
    4b.)   What kind of hardware and software solution is used in one of these initiatives?
    4c.)   Which are the criteria for the initiatives that are needed to apply it in The Netherlands?
    4d.)   Are there stumble blocks in this initiative, and how can they be overcome?

1.4   Theoretical framework

This research aims to analyze the problem and answer the research question among others by using concepts developed in the field of 'digital architecture'. The term "digital architecture" can be formulated as follows: digital architecture is a coherent and consistent collection of principles, which are based on rules, guidelines and standards that describe how a company, the information, the application and the infrastructure are formed and how they present it in use.[19] Digital architecture is a helpful tool of the developing process. Principles are the decisions that are very important for management. The principles are needed on different areas; from the business area to the data communication area. Rules are restricted to the employees, who are involved in the project, and are restricted to the purchase of software and hardware components. The

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[19] Rijsenbrij, D.B.B. (2004). Architectuur: een begripsbepaling. Collegedictaat Inleiding Digitale Architectuur, hoofdstuk 1.

guidelines can be seen as operational support. These guidelines are also restricted to the employees and to the purchase of software and hardware.

Digital architecture can be compared with physical architecture. The next figure shows the aspects of physical architecture that can be compared with digital architecture.

Beauty   Functional coherency   Construction

Value of experience   Value of usability   Makebility / maintainability
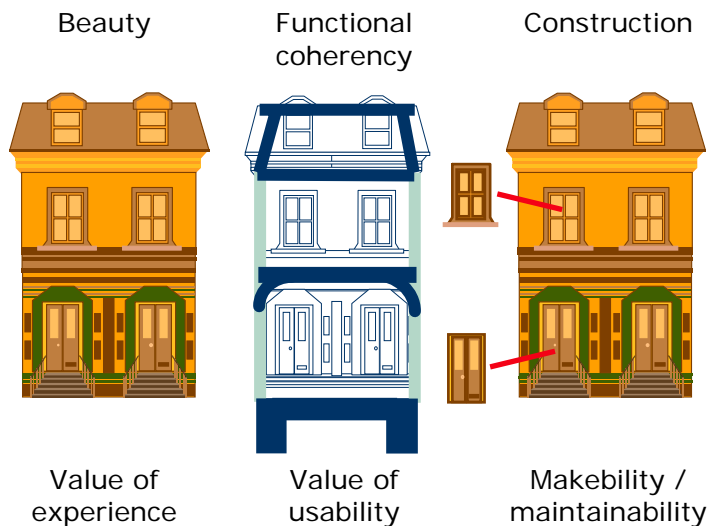
Figure 1: architecture aspects[20]

In physical architecture it is important that the value of experience is high. People can have different experiences with architecture. For example, for a lot of managers it is important that the architecture of their hotel is modern and looks rich instead of regular people which are satisfied with a normal hotel. The value of experience is important for the end-user.
In comparison to digital architecture the value of experience is also an important aspect. For example, children want to see big icons and shiny colours while older people are more interested in a lay-out that lets them handle their tasks more quickly and efficiently.

In architecture the structure is an important aspect. An architect has to identify the present components and the relation between those components. The design of the structure will lead to maintainability and flexibility. When there are changes in the future and there is a good structure, those changes can be implemented quickly without making a new design of the structure.

The construction in digital architecture can be seen as the choice of application software and hardware that will be used. It is important for the makebility and for the flexibility again.

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[20] Rijsenbrij, D.B.B. (2004). Architectuur: een begripsbepaling. Sheets of 'Inleiding Digitale Architectuur, hoofdstuk 1'.

Digital architecture can be seen in four layers; business layer, information traffic, applications, technical infrastructure.[21]
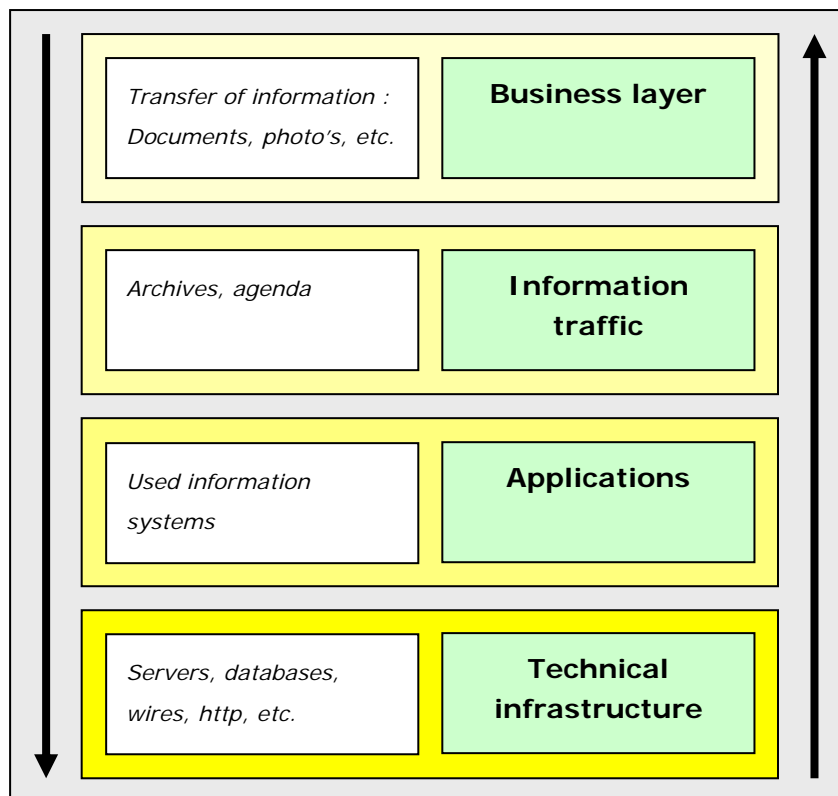
Figure 2: 4-layer model

The figure above shows the relation between the layers. Every layer can be seen as a base of the layer above and beneath.

The business layer describes in our situation the purposes of the organisation IBM. These purposes are related to strategy corporate community relations. In this layer the principles, rules and guidelines will be described and there will be an analysis of all the stakeholders that are involved in projects related to corporate community relations.

In the layer 'information traffic' it is important to get an understanding of all the information that is needed to make the right decisions. For this information traffic are the applications needed.

The application layer describes de completion of the applications.

The technical infrastructure is needed for the applications to run. This layer describes which protocols are needed, the wires, location of servers and workstations, etc.

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[21] Rijsenbrij, D.B.B. (2004). Architectuur in de digitale wereld. Collegedictaat Inleiding Digitale Architectuur, hoofdstuk 2.

1.5   Relevance

At the end of the nineties it was observed that it was difficult for younger people to find a way to Dutch arts and culture, and in particular the interests of ethnical groups in The Netherlands should be taken into account.[22] Between 2001 until 2004 the government started an initiative to promote cultural interests for a variety audience, but in July 2005 they could not come to the conclusion that their initiative worked out.

In the years after 1999 until 2003 there has been a little increase of cultural participation by Dutch citizens (see Table 1). To achieve a substantial increase in these figures, it is important that people know where they can find information about the various cultural projects and initiatives in The Netherlands.

Table 1: participation of forms of culture (divided into groups), Dutch citizens from 6 years and older, 1999-2003 (in percentages)			
	1999	**2003**	**Difference**
Traditional stage arts	24,8	24,4	-1%
Popular stage arts	25,7	29,9	+16%
Expressive arts	30,2	31,8	+5%
Cinema	53,2	56,2	+6%
Inheritance arts (museums, monuments)	51,9	55,4	+7%
Arts programmes on radio/tv	37,2	39,9	+7%
Amateur arts total	42,1	43,3	+3%
Expressive arts	30,4	31,8	+5%
Music	26,3	20,9	-21%
Theatre	7,9	4,5	-43%
Source: SCP (AVO)			

Starting a new cultural initiative in The Netherlands should be a great opportunity for IBM; to help promoting culture and arts by younger people and help them to find information about culture and arts.

1.6   Framework

1.6.1   Italian projects
The research restricts itself to an analysis of an Italian project, which offers a solution to cultural issues, of Italy IBM Foundation. These cultural issues are associated to theatres and museums. Because of the short timeframe of the research, the analysis is restricted to only one of the Italian initiatives.

1.6.2   Dutch context
In order to find out if the Italian model is applicable in The Netherlands, an overview is given of the relevant factors in the Dutch context.

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[22] Sociaal en Cultureel Bureau, Den Haag, juli 2005

1.6.3 Model implementation

The research outcome will serve as a model for the implementation of one cultural initiative in The Netherlands. The actual implementation of this cultural initiative is not a part of this research.

1.7   Method[23]
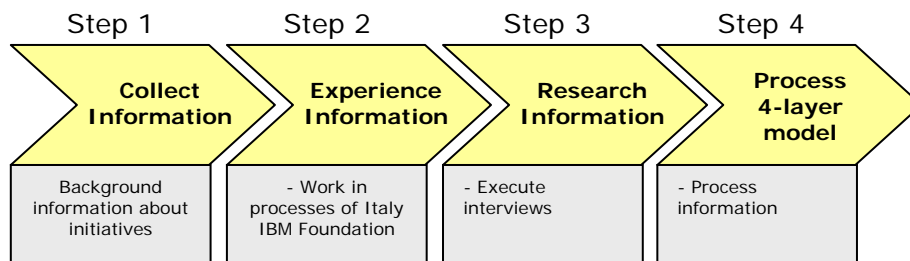
Figure 3: global rendering of the method

1.7.1 Collect Information

The research started with a case study analysis of a few examples of initiatives that Italy IBM Foundation applies, in particular the cultural initiatives. This technique was chosen to become familiar with all the initiatives, that Italy IBM Foundation has executed, and as a result it offers the opportunity to generate a new model using the models of the initiatives.[24] This part of the research has resulted in knowledge about the background of the initiatives of IBM related to Corporate Community Relation. The initiatives are distinguished by those which offer a solution for cultural topics and others and can be found in the appendixes.

1.7.2 Experience Information

For one month information for this research has been gathered by working in Italy IBM Foundation which is located in Milan. The method 'be involved' in all the projects is used to get a good picture of all the initiatives and of the organisation cultures.

1.7.3 Research Information

After the research of the background of the initiatives and work in Italy IBM Foundation, the research continued with an analysis of one of the initiatives. A lot of information about this initiative has been gathered through interviews[25] and questionnaires[26] with people that are closely involved in this initiative. Some interviews are recorded on tape while others are written on paper. The questionnaires were sent by e-mail.

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[23] Baarda, D.B. & Goede, de M.P.M. (2001). Basisboek Methoden en Technieken.
[24] Baarda, D.B. & Goede, de M.P.M., J. Teunissen (2001). Basisboek Kwantitatief Onderzoek.
[25] Hulshof, M. (2001), Leren interviewen.
[26] Baarda, D.B. & Goede, de M.P.M. & Meer-Middelburg, A.G.E. van der (1996). Basisboek Open Interviewen.

1.7.4 Process 4-layer model

In the final step the 4-layer model has been processed. This has been done by combining the information which was gathered in step 1 until step 3.

The information will be generated in the following results;

- A possibility to start a new 'ICT and culture' initiative in The Netherlands.
  The research will result in an analysis of the opportunities for IBM to start a culture-based initiative in The Netherlands, and identify any obstacle and ways to overcome it.

- Model digital architecture of a new initiative
  Finally the research results in a model that consists of a description of a digital architecture for the implementation of a new initiative in The Netherlands that offers benefits, by using ICT resources, for cultural topics.

1.7.5 Structure of this thesis

Chapter 2 covers background material about general information of the company IBM, in particular information of Italy IBM Foundation. This chapter contains business information of IBM and describes the project outline of projects developed by Italy IBM Foundation. The chapter continues with a description of the stakeholders that are involved in projects.

Chapter 3 describes the cultural project "Dionys" which is developed by Italy IBM Foundation. It starts with a description of the business information. In this business information the principles, rules and guidelines of the project will be described, a SWOT analysis[27] will be made and the stakeholders of the project identified. The application solution and technical solution will also be discussed.

Chapter 4 presents the possibility for IBM NL to start a new cultural project in The Netherlands. The information in this chapter is based on the project "Dionys". In this chapter some extensions and improvements are given for a new cultural project in a Dutch context.

Chapter 5 contains the conclusions.

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[27] A SWOT Analysis is a strategic planning tool used to evaluate the Strengths, Weaknesses, Opportunities, and Threats involved in a project or in a business venture. Strengths and weaknesses are internal to an organization. Opportunities and threats originate from outside the organization. A SWOT analysis, usually performed early in the project development process, helps organizations evaluate the environmental factors and internal situation facing a project.

2.   General

2.1   The company IBM

2.1.1 Introduction
The next chapter starts with the mission, objectives and principles of the company IBM, in particular Italy IBM Foundation. The mission, objectives and principles are important to develop a new project. All the projects have to comply with this mission, objectives and principles.
The chapter continues with a description of the project outline of every project developed by Italy IBM Foundation.

2.1.2 Mission
IBM wants with the strategy Corporate Community Relations benefit the community. They restrict their strategy to three fields; schools, arts & culture and social. IBM is a company that provides technology solutions. Therefore IBM wants to benefit the community using technology.

The mission of IBM can be formulated as follows:
Design and develop researches and experimental projects using information technology to benefit schools, arts & culture and social.[28]

2.1.3 Objectives [29] [30]
- Work hand-in-hand with public and non-for-profit organizations to design technology solutions that address specific problems.
- Demonstrate IBM's reputation as a solutions provider.
- Focus IBM's philanthropic programs to enhance relationships with customers and employees.
- Promote scientific research and broaden technical knowledge regarding information technology, telecommunication and related matters, and also by developing applications for the cultural sector.
- Underscore the role of technology as a tool to address societal issues.
- Foster education in order to enrich the cultural, historical and artistic resources of our country through the use of technology.
- Encourage education and professional training focused on the application of the information technology in various industrial sectors, in the areas of work automation and process control.
- Promote direct care initiatives in order to improve the well-being of the citizens.

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[28] Given by Angelo Failla, director of Italy IBM Foundation
[29] http://www.fondazioneibm.it/sito/en/foundation/statute.htm
[30] http://www.ibm.com/ibm/ibmgives/about/index.shtml

2.1.4 Italy IBM Foundation's principles

This paragraph describes the 5 most important principles in order of relevance.

1. Make use of ICT/technologies in all projects.
2. Create models that can be replicated.
3. Offer mainly knowledge, skills and human resources in stead of money.
4. Focus on a few main problems.
5. Have strong relations with communities. [31]
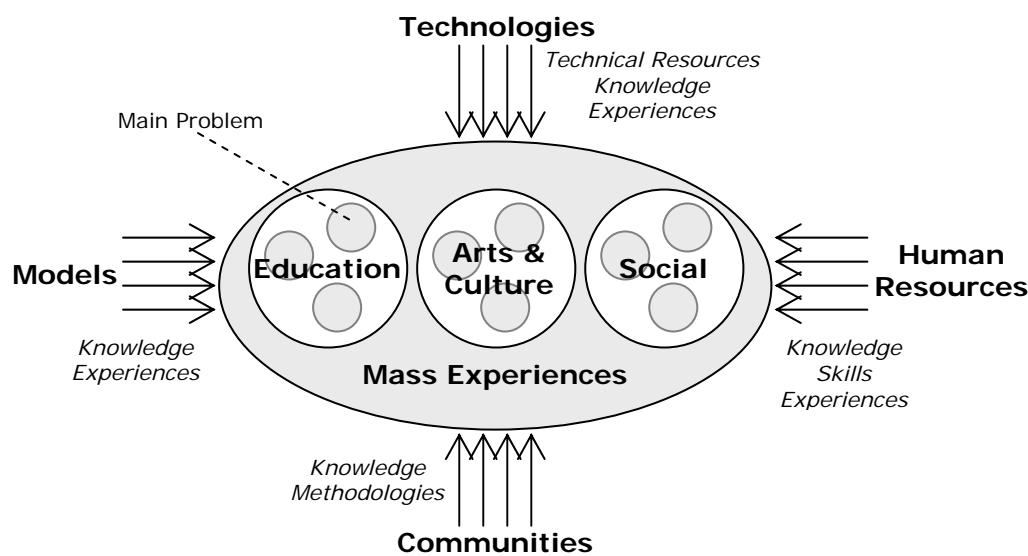
Figure 4: the five principles of Italy IBM Foundation

1. <u>Make use of ICT/technologies in all projects.</u>

This is the primary main principle. Everything Italy IBM Foundation will do and has done, needs to be focused on technology, because the company IBM is one of the greatest technological companies of the world.

An important reason to focus every project on technology is that IBM develops new software and hardware. At this moment IBM delivers computer devices, software and the relevant services. IBM sells computer systems, from personal computers and servers until mid-range systems and mainframes, to organisations as to consumers. The software varies from operating systems to global and specific solutions.

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[31] Universities, schools, museums, theatres, not-for-profit organisations and foundations

Another important reason is that the company IBM has a lot of knowledge and experiences on the technology field. Since the foundation, 15 June 1911 with the name 'Computing-Tabulating-Recording', the company IBM started to develop new technologies. All the knowledge and experiences that IBM collected in almost one hundred years can be used by Italy IBM Foundation to develop new solutions that benefits community in need.

2.   Create models that can be replicated.

The possibility that the projects can be transferred to another context is fundamental for Italy IBM Foundation. It is very important to create a model with all the knowledge and experiences, so it is easier for other institutions or other schools to develop the project with the same principles. The use of models results in efficiency and in effective ways to develop projects. By using a model the projects can be developed faster and cheaper, but also better (for example the customer is more satisfied about the project).

For example, Italy IBM Foundation developed the KidSmart project to introduce technology in the kindergarten in Italy. The experiences of Italy IBM Foundation with this project resulted in a model which is bases on the assumption that one KidSmart unit can be donated to every 50 children. This is an example of a small model, but in fact this model can be replicated immediately and easily by the institutions, schools and other groups that develop the KidSmart project.

A more complex example is the introduction of technology in the schools. The foundation started in 1998. The model started to introduce technology in the classroom on the teacher's desk and not for example in a separate lab. The complexity was not only to change the way of using technology in schools, but also to change the way of thinking of the teachers. So Italy IBM Foundation developed a model for the approach for technology in the classrooms, trainings for teachers, and the use of technologies in all their activities. At this moment there is a good model that can be replicated by other schools.[32]

3.   Offer mainly knowledge, skills and human resources in stead of money.

There are many ways to help community in need. A solution that is often use is to donate an amount of money to a specific subject. This solution is not the solution that IBM prefers. IBM wants to go deeper into the problems by offering human resources with capabilities and skills, technology, knowledge and experiences.

Italy IBM Foundation prefers following the project step by step from the analysis of the problem until the communication of the results in stead of giving money like the normal philanthropy on an operative way.

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[32] http://www.ibm.com/ibm/ibmgives/grant/education/programs/kidsmart.shtml

4.   <u>Focus on a few main problems.</u>
It is important to work in the same area for years in order to become more experienced in a topic. Italy IBM Foundation focus it selves on a few problems in order to have critical mass experiences. For example Italy IBM Foundation started the theatre project in 1994 and they are still continuing on this topic for more than ten years. They learned a lot of all the previous experiences and they became a kind of expert on this kind of topic.

By working in the same area Italy IBM Foundation has become more knowledgeable in this area. For example people who know the foundation know that Italy IBM Foundation is active in the Arts & Culture field, in particular in museums and theatres; in the Education field, in particular in school systems; and in the Social field, in particular for people with disabilities. The foundation is well known due to the fact that they are continuing working on the same topics for years.

5.   <u>Have strong relations with communities.</u>
In every project there are communities involved, because it is fundamental to have a strong relation with communities. Italy IBM Foundation has a strong relation with universities, non-profit-organisations, foundations, public institutions and private institutions. These groups have their own knowledge, experiences, ideas and models that are useful to share to go deeper into the development of a project.

Another important reason to have strong relations with communities is that it is better for the reputation of Italy IBM Foundation. To work for example with the local university the audiences see, in this way, Italy IBM Foundation not as a single expression of the company IBM, but as its own organisation that supports the community.

2.2 Project outline

The next paragraph explains the phases of the development of a project as Italy IBM Foundation would use it, based on the field work done in Milan.

2.2.1 Idea

Every project starts with an idea. Usually ideas come from IBM Italy Foundation, but the ideas can also come from other parties.

A lot of ideas come from IBM Global, like KidSmart, TryScience, etc. Most of these projects are carried out all over the world. When IBM Global decides to start a new project in Italy, Italy IBM Foundation is obliged to carry out this project.

IBM has relationships with institutions and it happens that an institution asks Italy IBM Foundation to start a project. In many cases Italy IBM Foundation rejects these ideas, because it does not correspond with the objectives of IBM.

Sometimes it happens that customers of IBM want to make business with IBM, but they also want to make projects with not-for-profit purposes.

2.2.2 Areas of intervention

In the first phase an idea will be elaborated. In this phase it will be clear if it is possible to transform the idea into a plan of development. This phase will be carried out by Italy IBM Foundation.

- Identification emerging issues
  The purpose of this phase is to get insight in the cultural emerging issues that are important for the Italian and the European community. In this phase it is also important to get an understanding of all the stakeholders, communities and partners that can be involved in the project.

- Determine objectives
  This phase has the purpose to get a good view of the existing situation of the organisation IBM and of the stakeholders, communities and partners that are involved in the project.

- Internal research
  In this part a research will be done of the advantages (strengths) and disadvantages (weaknesses) to develop this project.

- External research
  In this part a research will be done of the opportunities of the project and there will be done a research of the possible threats.

2.2.3 Research

This phase can last for years. The purpose of this phase is to get insight into on the subject. It is important to create solutions making use of information technology, communication and organisation models.

- Use of information technology
  In every project information that Italy IBM Foundation develops technology is required. Because IBM invents and delivers high-tech, it is compulsory to make use of IBM products. In some cases it is allowed to make use of high-tech products of other companies. For example it is allowed if IBM does not have the high-tech product that is needed for the project or if IBM cannot deliver on time.

- Use of communication
  It must be clear what the best way is how to communicate and what the best way is how to use the information technology. For example, for an information system that provides cultural information, it must be clear how cultural institutions, universities, schools, citizens, etc. can receive the information and how they can provide information to the information system.

- Use of organisation models
  Every organisation is different and has its own organisation culture. It must be clear how to use information technology in the organisation. Therefore it is important to use organisation models for a better understanding of the organisations that are involved into the project.

- Solutions
  When a solution is created it will be tested. These tests consist of evaluations and experiences of the end-users. With these evaluations and experiences a better solution will be created.

2.2.4 Training and communication

- Trainings
  There can be a lot of changes in an organisation when information technology is introduced in this organisation. For example, when information technology is introduced at schools, teachers may have to change their way of teaching. IBM offers not only information technology, but also trainings to use information technology the best way.

- Promotion
  It is important to promote the project to the community. When the community knows about the project, it is good for the image of IBM and of all the parties that are involved into the project. In most cases the media will be involved.

These findings can be depicted in the following schematic figure, the outline of which is based on a basic scheme of Marcus and van Dam, 1999.[33]
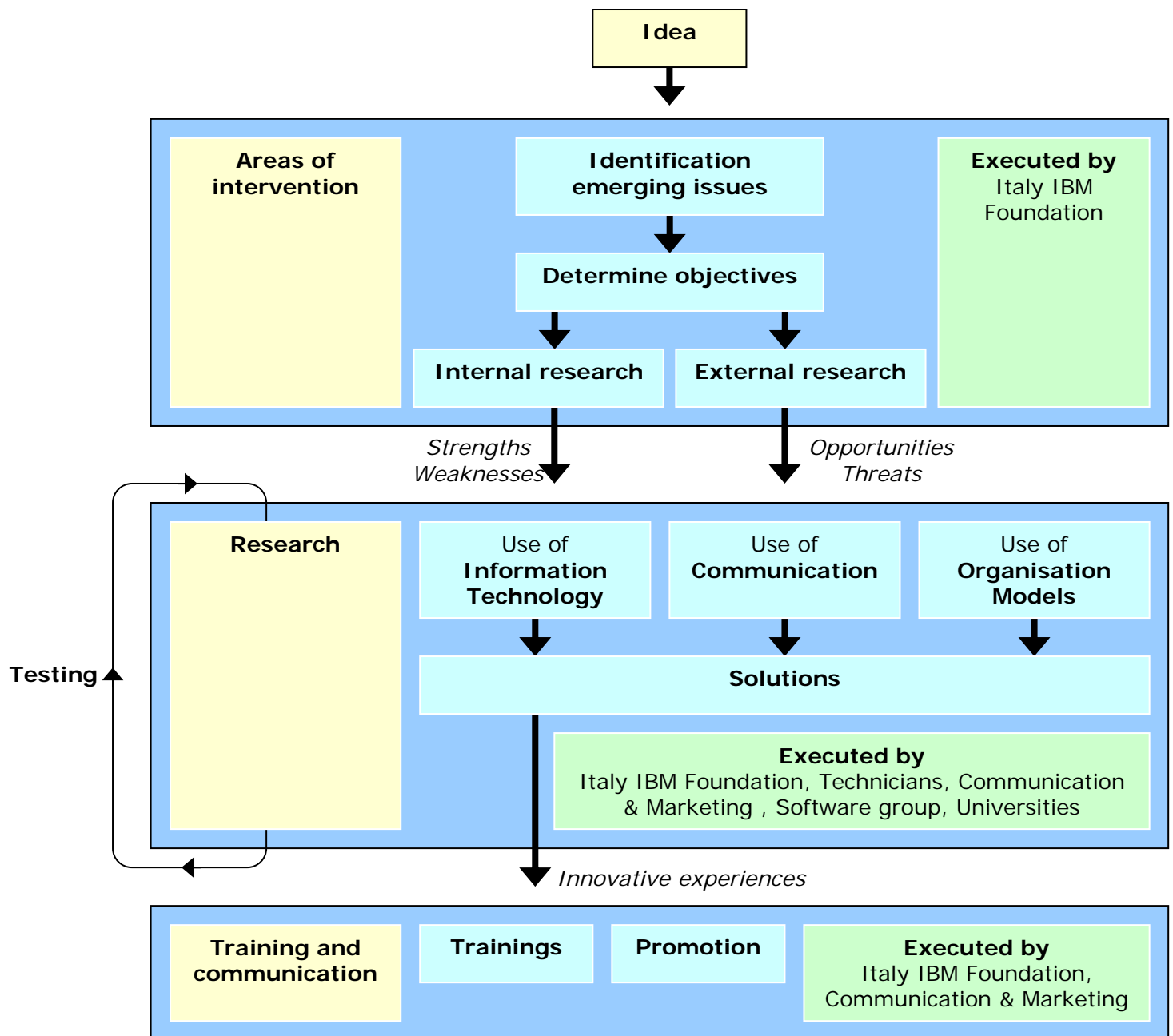
Figure 5: rendering phases [34]

[33] Marcus, I. A. & van Dam, N. H. M. (1999), Organisatiekunde en management.
[34] Subject of this website translated into this model
http://www.fondazioneibm.it/sito/en/foundation/project_outline.htm

2.3 Stakeholders

2.3.1 Introduction

Before the start of a new cultural project in The Netherlands, is it fundamental to know all the stakeholders that might be involved into the project. The figure below shows a rendering of all the stakeholders that are involved in the projects, that Italy IBM Foundation carried out, based on the field work done in Milan.
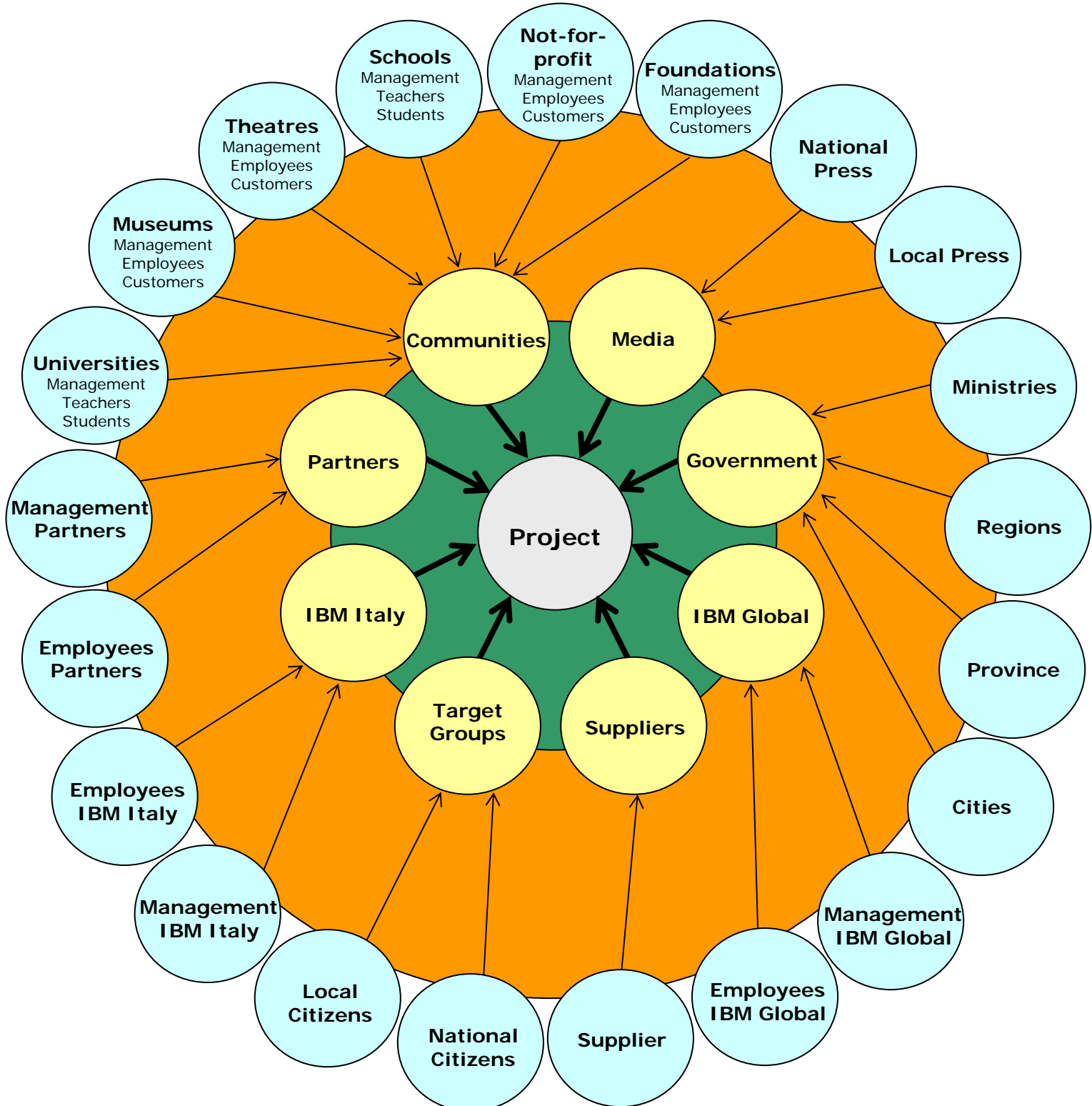
Figure 6: rendering of the stakeholders

The figure in the middle of the figure is the project. Around the project are the main groups that can wield influences directly on the project. These groups consist in most cases of more persons or groups which are shown in the outmost circles.

2.3.2 Definition stakeholders

There are many definitions used of the term 'stakeholder'.[35]

"Interoperability Clearinghouse Glossary of Terms" defines stakeholder as an individual or group with an interest in the success of an organization in delivering intended results and maintaining the viability of the organization's products and services. Stakeholders influence programs, products, and services.[36]

"PMOStep" uses the definitions for stakeholder as followed: specific people or groups who have a stake in the outcome of the project. Normally stakeholders are from within the company, and could include internal clients, management, employees, administrators, etc. A project may also have external stakeholders, including suppliers, investors, community groups and government organizations.[37]

In this research, combining these interpretations, the term 'stakeholder' is defined as: **an individual or group with interests in the project and that can have influence on the design and on the progress of the development of the project.** Stakeholders can be divided into two different parts, ordered by its relevance:

Part 1.)   Those who make the decisions

Part 2.)   Those who influence the decisions

This definition is chosen because it is aimed to come to the conclusions which IBM can use by their decision process. Therefore, in this research the definition of stakeholder is restricted only to people who make the decisions and those who influences these decision.

Part 2.)   <u>Those who make the decisions</u>

This group consists of people that decide how the progress of the development of the project will be. These persons are responsible for the project and they can directly influence the project. In most cases these persons are involved in the management.

- Management IBM Italy
  The project influences the image of IBM Italy. Therefore IBM Italy must be involved in the projects. IBM Italy can make the decisions to continue or to stop the project. In many cases IBM Italy can also be seen as a partner that offers money, human resources and technical devices.

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[35] Web definitions
http://www.google.com/search?hl=en&lr=&oi=defmore&q=define:Stakeholder
[36] http://www.ichnet.org/glossary.htm
[37] http://www.pmostep.com/290.1TerminologyDefinitions.htm

- Management IBM global

  All the projects must live up to the requirements given by the management of IBM global. IBM global can commit Italy IBM Foundation to start new projects, for example the global projects like KidSmart, or they can forbid some projects to start or to continue. For example, if IBM Italy wants to start a project about drugs, the management of IBM global will not approve it because projects about drugs are not in the policy of IBM.

- Management partners

  It is fundamental to involve partners when IBM starts a new project. The management of these partners decides the degree of involvement. They decide how much money they will spend on the development of the project, human resources and technical devices.

- Management every community

  The management of the communities decides to share knowledge, experiences, ideas and models about the content of the new project. Therefore it is important to involve communities in a new project.

Part 3.)   Those who influence the decisions

In this part people are involved who influence the decisions of the people in part 1. This group will also have influences on how the project will be designed.

- National and local press

  In every project that will be developed the media must be involved. One of the objectives is to demonstrate IBM's reputation as a solutions provider. A good way to achieve this objective can be done by using the national and the local press. In normal situations of developing a project the media is not a stakeholder. But in CCR-projects the media should be made a stakeholder. In a certain way the press will influences the content of the project. The influence of the press is related to the development; when starting a new project it must be developed in such way that it is an interesting project for the press to write about it.

- Ministries, regions, province and cities

  These groups make rules that can have influence on the project. For example, when these groups decide to enhance the culture in education, then it is important that IBM uses the guidelines of these groups for the projects that support culture and/or education.

  In many projects these groups can also be seen as partners.

- Supplier

  The project is dependent on the supplier. The supplier influences the price of the technological products, the quality and the delivery time. This stakeholder will only have influence on the schedule of the project. When the supplier can not deliver on time, the development can be delayed which can have big influence on the continuity of the project. For example, if a project offers training courses for teachers, it must be done in vacations. If there is a delay teacher will not be able to do these courses because the schools are started.

- National and local citizens

  The purpose of the strategy is to help community in need. These groups are the end-users. Therefore it is fundamental to involve citizens in the project. During the development the opinion of these groups is important. These groups can show the good parts and the less good parts of the project.

- Employees of IBM Global, students, partners and every community (also teachers)

  The employees will execute and help with the development of the project. These persons can share their ideas to enhance to project.

- Customers communities

  This group is important for the community for its existence. This party influences the project in such way that the content should not be contradictory to the policy of the customers of the communities.

2.4 Conclusion

Italy IBM Foundation designs and develops researches and experimental projects using information technology to benefit schools, arts & culture and social institutions in general. The way how Italy IBM Foundation carries this out is based on 5 principles:

1. Make use of ICT/technologies in all projects.
2. Create models that can be replicated.
3. Offer mainly knowledge, skills and human resources in stead of money.
4. Focus on a few main problems.
5. Have strong relations with communities.

Every project consists of the four areas: areas of intervention, research, testing, training and communication.

Before developing a project it is important to know all the stakeholders that will be involved in the project.

3.   The Dionys project

3.1   Introduction
The next chapter is about an initiative that is developed by Italy IBM Foundation. The information of this chapter is coming from interviews and conversations with employees and partners of Italy IBM Foundation.

3.2   Motivation
In appendix A there is an overview of all the initiatives that Italy IBM Foundation carries out. The Dionys project has been chosen to be examined, because this project has a lot of experiences with different cultures (European and Mediterranean cultures).

3.3   Background[38]
On 16 December 2002 Italy IBM Foundation, the Piccolo Teatro di Milano and the "Libera Università di Lingue e Comunicazione" (Free University of Languages and Communication) in Milan launched the "Dionys" project together with the Union of European Theatres, the Foundation Ortigia of Siracusa and the Foro Valldigna para el Mediterraneo of Valencia.

The goal of the project is to promote the inception of a network between Theatres, Universities and Research Centres. To achieve this goal a highly advanced technological infrastructure has been used, with the aim of fostering cultural exchange between European and Mediterranean regions.

This solution provides information in an online multilingual environment. It can be read in Arabic, English, French, Greek, Israeli, Italian, Spanish and Turkish.

The "Dionys Project" targets network users as well as professionals in this sector.
By accessing the www.dionys.org site users will be able, for example, to follow theme based outlines defined by highly esteemed professionals, keep up to date on the most remarkable events within the Euro-Mediterranean area (news, press survey), find the most qualified proposals to guide them through the theatre world (specialized magazines, schools, masters, new job profiles). Also, to be highlighted is the theatrical dictionary: a selection of 100 words, with definitions, comments and illustrations.

Additionally, specialized operators will have access to a reserved area where they can share confidential data[39] and specific professional information[40].

The Dionys Project addresses Internet users in general and specialised operators in particular. It serves as a link amongst the various professionals operating in the sector, offering them a tool for the exchange of information and ideas on issues of common

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[38] Press information IBM Italy
[39] Theatre plans, technical spec sheets, useful tour information, etc.
[40] Products, training initiatives, regulations, etc.

interest- it addresses Internet users, offering a wide array of information and services in the theatre world.

A search engine based on a highly developed system of query terms will be created to facilitate navigation within the site.
A procedure for the direct entry of data (upon issuing of a password) will be incorporated in the site to foster the participation of theatre professionals and more effective data updates.

By stimulating the exchange of experiences between different cultures, knowledge and languages, the network will help establish local as well as global links and will help gain momentum on themes related to the economical and cultural development, in a communicative environment and by respecting and valuing individual identity.

The importance of quickly implementing projects aimed at supporting, through a reliable technological infrastructure, the cultural exchange, has been strongly emphasized on occasion of the Euro Mediterranean Conference of the Foreign Ministers, held in Valencia the 22 and 23 of April 2002, with the patronage of the European Union and UNESCO. During the conference, initiatives such as this were highly recommended, defined as an essential tool for the inter-cultural development of the Euro Mediterranean region.

3.4   Information needs
The next paragraph describes the information needs. Information needs are important for the completion of the project.

The next bullets show the information of citizens which are interested in art and culture and who live in the Mediterranean area. The completion of the Dionys project is based on these needs. [41] [42] [43]

- Cultural Information
  The interests of people in cultural information can be divided in news, reviews, materials, schedules, photos, audios and videos.

- Structured information
  The people want this information being structured. This means that an information system (in this case Dionys) order and categorize the information so it can be found easily using internet.

- Central place
  The most important information about arts art and culture (in case of Dionys this information is about theatres) must be available at one central place.

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[41] Interview Angelo Failla, Italy IBM Foundation
[42] Interview Dott. Giovanni Soresi, Piccolo Theatre
[43] Interview Lavinia Galli, Museo Poldi Pezzoli

- Location and time independent
    The information must be provided at any time (24 hours, 7 days a week) and at any place. Providing information using internet offers this possibility.

- Support
    People with interests for cultural information want to have support. This means that if they have questions about cultural topics, that they have the opportunity to receive an answer to this question using e-mail, phone, etc.

3.5 Business information

According to the 4-layer model this paragraph describes business information of the Dionys project which is based on the project outline of Italy IBM Foundation. The principles, rules and guidelines, SWOT analysis and the stakeholders of the Dionys project will be described.

3.5.1 Principles, rules and guidelines of the project Dionys.[44] [45]

The principles, rules and guidelines of the Dionys project are supported to the principles of the strategy CCR.

Principles:
- Principle 1.1: Granting visibility and easy access throughout the globe to knowledge of different theatrical experiences, thanks to high-tech.
- Principle 1.2: An international agency on the Internet where you can find a large number of contacts, information, ideas and where you can search documents about the world of the European theatre.
- Principle 1.3: A network of theatres, universities and technological research institutions that operate in the Mediterranean area realized in a virtual shared place.
- Principle 1.4: Offering the information in different languages.
- Principle 1.5: An incentive to exchange professional resources and an opportunity to gain knowledge of different expertise, cultures and languages.
- Principle 1.6: To realise educational and vocational training programs by creating an advanced and uniform structure of services.[46]
- Principle 1.7: Helping improving awareness of European cultures through the theatre, a real form of art which can cross many different fields, forming, enriching and entertainment.
- Principle 1.8: The information of the information system must be available 24 hours and 7 days a week.
- Principle 1.9: Security and privacy for the involved institutes and citizens will be guaranteed.
- Principle 1.10: The most important cultural information must be available at one central place.
- Principle 1.11: The information system must be independent of its location.

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[44] http://www.dionys.org/dionys/mission.htm
[45] Presentation of the Piccolo Theatre in Milan
[46] Presentation by Italy IBM Foundation

Rules:

- Information to the information system can be controlled by a certain group of persons.
- All information about theatre-related topics must be available using internet.
- There must be a secured access using a username and password for login to view personal data.
- Theatres must use the portal to offer new content of data.
- There must be a secured access using a username and password for login to view personal data.
- Cultural institutes must use the portal to offer new content of data.

Guidelines:

- Highlighting activities crossing borders between art and science, philosophy and literature, architecture and theatre, developing events that get a benefit from these languages.
- Increasing opportunities for inspiration and synergies to spread larger, re-launching cultural exchanges, beyond a business standpoint, stimulating a new kind of artistic creation.
- Building up stable networks between Universities, Media, Publishing Industries and European Theatres, in order to gather various interests under the same aegis, draw attention to new languages and build new audiences.

3.5.2 SWOT analysis[47]

Strengths

- A highly advanced technological infrastructure
  Next generation technologies have been adopted for the online multilingual environment[48] designed and developed by the IBM Centre for e-business Innovation, for the implementation of an innovative solution capable of responding to the fundamental requirements of the project: simple and easy to navigate, scalable secure (with the inclusion of protected areas) and, no less important, an open, modular editorial system enabling easy handling and management of contributions from remote editorial locations.

- Distinctive partner competences.
  In collaboration with different partners a network has been created a between theatres, universities and technological research centres in the Euro-Mediterranean area. Because of this collaboration Italy IBM Foundation enhanced its relation between these parties.

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[47] Based on an interview Anna Di Summa, Italy IBM Foundation
[48] Italian, French, English, Spanish, Greek

- Sharing of knowledge about the theatre-related topics in Euro-Mediterranean area.
  By sharing knowledge about the theatre-related topics the Dionys project can be seen as a central place to find information about theatres in European and Mediterranean regions in different languages.

- Online multilingual environment.
  The information system contains information in different languages. In this way the target group will be greater; more people living in the Euro-Mediterranean area can view the information in their own language.

Weaknesses

- New contents need to be continually updated to the website.
  To provide people with the high-lights in the theatrical field, it is important that those high-lights are up-to-date. When the information system is not up-to-date anymore, it can be only used as an archive of (old) theatrical documents, therefore losing much of its innovative appeal and usefulness.

- Online multilingual environment.
  Because Dionys provides information in different languages the information system is hard to maintain. If there are changes, it must be changed in all the different languages.

Opportunities for Italy IBM Foundation

- Access to knowledge about theatre-related initiatives in the Euro-Mediterranean area.
  Italy IBM Foundation carries out a lot of initiatives in the cultural field. This project offers them access to get a better understanding and to become well-known of theatre-related initiatives in the Euro-Mediterranean area.

- Collaboration with theatres, universities and research centres.
  By collaborating with theatres, universities and research centres Italy IBM Foundation will have a better relation with these parties. These relations could be important when Italy IBM Foundation is going to start a new project in the future.

- Experiences with other countries.
  Dionys is a project which is used by people in European and Mediterranean regions. By the development of the Dionys project, Italy IBM Foundation has more experiences with developing a project with other countries and different cultures.

<u>Threats</u>

- Another organisation could possibly start a comparable project.
  One of the goals of the project is to be a central point where people can find information about theatres. If there is another project created by another organisation, then there are more places to find a lot of information about theatres, so that means that Dionys is not a central place to find information about theatres anymore. So it is a bad scenario if another organisation starts a cultural project that has the same functionality as Dionys.

3.5.3 Stakeholders[49] [50]

- Collaboration parties
  Italy IBM Foundation collaborates with the Piccolo Teatro di Milano, the Libera University di Lingue e Comunicazione IULM of Milan, Union of European Theatres, the Foundation Ortigia of Siracusa and the Foro Valldigna para el Mediterraneo of Valencia. These parties decided together which information the project would provide.

- IBM Italy[51]
  The development of the project is executed by IBM Italy. IBM Italy also offers the hardware and software for the project. This group can also be seen as the supplier.

- Media[52]
  According to chapter 3.3 the media is used in the project. The project is promoted in two ways:
  - Press conference organized by IBM Italy Foundation, Piccolo Theatre and IULM University of Milan on December 16th 2002.
  - News in national and local newspapers.

- End-users
  The following parties are involved in the project: students, researchers and different theatres. These parties can be seen as the end-users. The interest of culture field of these groups influences the development of the project. The project is developed to adjust to the requirements of these end-users.

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[49] Based on an interview with Anna Di Summa, Italy IBM Foundation
[50] Website project "Dionys"
   http://www.dionys.org/dionys/eng/credits.htm
[51] See chapter 2.3, Stakeholders
[52] Designed and developed by the department IBM Centre for e-business Innovation

3.6 Application solution

According to the 4-layer model this paragraph describes the application solution of the Dionys project.

3.6.1 Content

The application solution of Dionys contains the following items:

- Find information
- Language option
- Agenda
- Professional area

- Find information
  The most important purpose of this cultural information system is that people can find information about cultural events in the European and Mediterranean area. The information system will contain:
  - Documents: these documents contain information about news, reviews, material, schedules and (historical background of) theatres. These documents are in a common used standard format[53] so that everyone can read these documents.
  - Multimedia: a lot of information has been represented by using photos, audios and videos of most important shows.
  - Archives: it is possible to navigate through shows, exhibitions, lectures, press conferences and materials presented by different cultural institutions.
  - Search engine: there is a search engine available to find documents. This search engine is comparable to the search engine of Google®, but it only search for documents that are available within the information system.

- Language option
  Users have to choose their preference language in order to view the website of the Dionys project. In many cases when documents are not available in the preference language, the original language of those documents will be shown.

- Agenda
  The agenda includes the most important spots to be, the events not to miss, the festivals, the most prestigious and interesting exhibitions in European panorama and around the countries of the Mediterranean. It also includes an up-to-date section to find the major events accurately and with detail, accompanied by a description of the show events and all useful information in order to know time and place of every forthcoming event. Day by day, the Agenda follows the program of every show internationally and suggests to those interested or merely curious a selection of events not to miss.

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[53] At this moment the Portable Document Format (PDF) is common used.

- Professional area

  There is a separated area in the Dionys project for registered persons. People who register to this project can have a tool of information and comparison on common interests. They also have the opportunity to use the 'news area' where they can find contest announcements, updates and conventions. There is also a topic "Registry of Theatres" available with the technical, organizational and managerial information.

3.6.2 Software

To make the content possible that has been described in the previous paragraph, the following software is needed:

- Linux RedHat[54]

  Linux RedHat is a free version of the operating system Linux. This operating system is an open source product. Linux RedHat is a stable operation system which is compatible with the hardware of the IBM eServer xSeries. Besides by IBM helps developing and improving Linux[55] and can offer support for this operating system.

- Lotus R6/Lotus Domino Utility Server[56]

  IBM Lotus® Domino® server provides enterprise-grade collaboration capabilities that can be deployed as a custom application platform. It is independent of hardware platform, operating system, directory and client access and it provides security features to help safeguard business-critical information. This software maximizes server availability with advanced clustering, transaction logging, server fault recovery, and automated diagnostic tools. It also helps reduce time and costs associated with deploying and managing your infrastructure, through advanced administration features.

- Lotus Domino Designer 6[57]

  IBM Lotus® Domino Designer® is application development software that allows developers to rapidly build and deploy security-rich, multiplatform collaborative applications. It lets application developers and web site designers create core business applications based on forms, views, pages, framesets, integrated instant messaging, Java, JavaScript, Web services, SQL and more. This software enables developers to build applications using industry-standard programming tools. Is also provides capabilities to develop applications accessible from Web browsers and mobile devices.

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[54] www.redhat.com
[55] www-1.ibm.com/linux/
[56] www.lotus.com/products/product4.nsf/wdocs/dominohomepage
[57] www.lotus.com/products/product4.nsf/wdocs/dominodesignerhome

3.7   Technical solution

According to the 4-layer model this paragraph will describe the technical solution that has been used in the Dionys project.
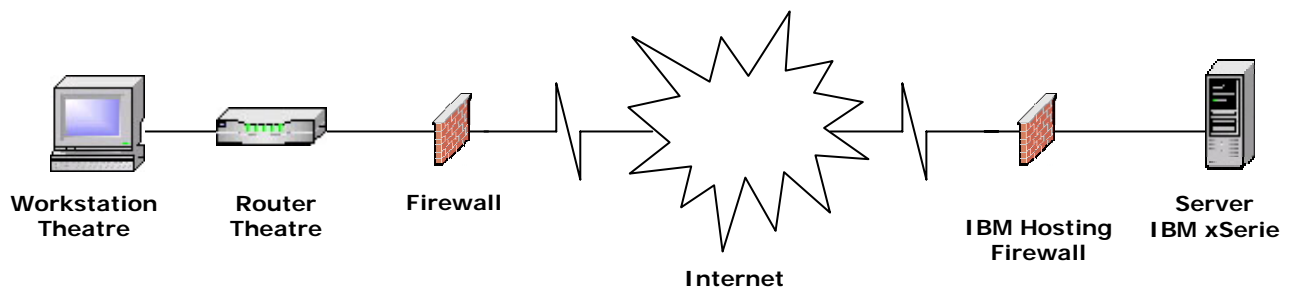
3.7.1 Technical infrastructure

Figure 7: rendering technical infrastructure of the Dionys project[58]

The Dionys project offers information via internet. All this information has been stored in a server which is behind a firewall.

The theatres have the opportunity to upload information using internet. In a theatre a workstation has been connected to internet. In most cases the workstation is behind a router and a firewall, but that is the responsibility of the theatre itself. The router and firewall of the theatre has been taken into the technical infrastructure, because it might be important in the future if the Dionys project will offer support for theatres using remote access.

3.7.2 Hardware

- Server IBM eServer xSeries[59]

    This high-tech computer can be used as a server. It supports two Xeon processors; extensive list of available components; no tools required to open case or replace drives; comprehensive management software.

    The purpose of this server is processing, managing, and sharing data among multiple computers. In business use it has been used for backing up networked PCs; sharing printers and files; enabling mobile employees to connect remotely.

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[58] Interview Anna Di Summa, Italy IBM Foundation
[59] www-03.ibm.com/servers/eserver/xseries/

3.8   Stumble block

The next paragraph describes a stumble block of the Dionys project, based on the field work done in Milan.

3.8.1 Does not receive enough information

The Dionys project has been launched on December 2002. Within 2 years there has been concluded that the Dionys was not up-to-date; the Dionys project did not receive enough information from the theatres, universities and technical research centrums. This could mean that the involvement of the stakeholders (or some of them) had not been properly analyzed in the project phase.
This stumble block led to the outcome that the Dionys project does contains less documents and a lot of the received documents are outdated.

Italy IBM Foundation and the Piccolo Theatre think that the reason for this stumble block is that there are less people in the project who are able to collect information from the theatres, universities and research centrums to keep it up-to-date.

Currently news facts are still being showed on the website, because otherwise the project could loser the target group.

3.8.2 Measures

Currently Italy IBM Foundation wants to continue the project and they are in deliberation with the "Piccolo Theatre" in Milan. In paragraph 4.5 this stumble block will be worked out.

3.9   Conclusion

The digital architecture of the project Dionys is based on promoting the inception of a network between theatres, universities and research Centres. All these parties are located in the European and Mediterranean regions.

The completion of the digital architecture is that people can find cultural information using the website. In this project advanced high-tech with IBM software (Lotus R6/Lotus Domino Utility Server and Lotus Domino Designer 6) is used. Important stakeholders of the Dionys project are IBM Italy, theatres, universities, technical research centrums and the media.

A significant stumble block has proven to be that fact that it is difficult to keep the website up-to-date because the administrator did not receive enough documents from the involved parties.

4.   New cultural project in The Netherlands

4.1   Introduction
In the next chapter a new cultural initiative will be described that can be possibly carried out by IBM in The Netherlands. The base of all the information is coming from the project Dionys of Italy IBM Foundation that has been worked out in the previous chapter.

4.2   Background
The organisation IBM NL executes only a few initiatives that help creating a solution for some cultural issues. IBM NL wants to extend their strategy CCR by developing a new cultural initiative.

The goal of the new cultural project in The Netherlands is comparable with the goal of Dionys; promote the initiation of a network between theatres, museums, universities and schools by fostering cultural exchange for Dutch citizens. Dionys is an information system to achieve this goal. Therefore the new cultural project will concentrate itself to an information system that provides cultural information.

At this moment there is no good information system available in The Netherlands where people can find a lot of information[60] about arts and culture. In The Netherlands IBM NL have a lot of good relations with museums. Therefore the new cultural project will involve theatres and museums. Because there are many Dutch websites of museums, the information of these museums is not stored in one central information system. People have to search in many different website for information. For theatres there is a website to find information.[61] It could be possible to integrate some information of this website could be possible in collaboration with this party, integrated in the information system of the new cultural initiative. The new cultural initiative will be an information system where people can find information about arts and culture in The Netherlands.

For younger people in The Netherlands it is difficult to find a way in Dutch arts and culture. The new cultural initiative will be, in collaboration with theatres, museums and universities, a signpost for younger people to find their way to arts and culture. Because of the availability of an education programme that the initiative offers, schools get the possibility to use cultural lessons in the classrooms. There is also the possibility for schools to organise excursions to theatres and museums using the information system of the new cultural initiative.

4.3   Information needs
The information needs of the Dionys project are multicultural[62]. The founded information needs by Italy IBM Foundation and its partners are not only for an Italian context, but also for the European and Mediterranean context. Therefore the information needs of Dutch citizens for the new cultural project can be adopted from the Dionys project.

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[60] News, reviews, material, schedules, photos, audios and videos
[61] Website
www.theatercentraal.nl
[62] European and Mediterranean cultures

4.4   Business information

The next paragraph describes the business information of the new cultural initiative in The Netherlands. This information is based on the business information of the Dionys project, but it is adapted to be applied in a Dutch context.

4.4.1 Principles, rules and guidelines

The multicultural character of The Netherlands offers the possibility to apply international projects, like Dionys, in a national Dutch context. Therefore the principles mentioned in the Dionys project can be adopted with minor changes by the new cultural project; the differences of the principles of the new cultural project are that they are only based on the Dutch context and not on the European and Mediterranean regions.

Principles:
- Principle 2.1: The information system must be available by different communication channels.
- Principle 2.2: The information system must be designed so the programming code can be re-used.
- Principle 2.3: The information system must have educational issues for children.
- Principle 2.4: The information system needs to offer support in cases there are indistinctness.
- Principle 2.5: Information can be viewed by different devices[63].

Rules:
- Information to the information system can be controlled by a certain group of persons.
- All information about cultural topics[64] must be available using internet.
- There must be a secured access using a username and password for login to view personal data.
- Theatres and museums must use the portal to offer new content of data.
- There must be a secured access using a username and password for login to view personal data.

It is self evident that these rules are applicable universally, and constitute no difference between the Italian and the Dutch situation.

The following rules are specific rules for the Dutch situation, in that they represent improvements with respect to the original Dionys project:
- There must be someone available[65] to support users of the information system. Regarding to the information needs a need is that people want to have good support. In the Dionys project people can only get support sending an e-mail. The new cultural project will offer more support.
- All teaching material must be available digitally.

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[63] Desktop computer, PDA/MDA, mobile phone using WAP/GPRS/UMTS.
[64] Like special events, description of cultural institutes, etc.
[65] By email, phone or FAQ

The new cultural will involve schools. Teachers will have the possibility to download teaching material from the website.

Guidelines:
- The presence of an integrated calendar system in the information system.
- Offering information by using webcams in cultural institutes.
- Making use of sms and e-mail function to provide important information.
- Provide a dynamical user interface based on the wishes of the end-user.
- Provide tools[66] for the involved institutes to improve the collaboration.
- E-mail and a sms function could be available to provide important information.

These guidelines can be used for the Dutch situation for improving the information system. The completion of these guidelines for the new cultural project has been worked out in paragraph 4.6 and 4.7.

4.4.2 SWOT analysis

The strengths, weaknesses, opportunities and the threats of the new cultural project can be adopted from the Dionys project. Those items are extended to museums and theatres instead of only theatres.

SWOT	Dionys	The Netherlands
Strengths		
• A highly advanced technological infrastructure	Yes	Yes
• Distinctive partner competences	Yes	Yes
• Sharing of knowledge about the theatre-related topics in Euro-Mediterranean area.	Yes	Changed* Extended**
• Online multilingual environment.	Yes	No
Weaknesses		
• New contents need to be continually updated to the website.	Yes	Yes
• Online multilingual environment.	Yes	No
Opportunities		
• Access to knowledge about theatre-related initiatives in the Euro-Mediterranean area.	Yes	Changed* Extended**
• Collaboration with theatres, universities and research centres.	Yes	Extended**
• Experiences with other countries.	Yes	No
• Experiences with education.	No	Yes
• Collaboration with existing parties.	No	Yes
Threats		
• Another organisation could possibly start a comparable project.	Yes	Yes
• Another organisation started already a comparable project.	No	Yes

Table 2: overview SWOT analysis Dionys and the new cultural project in The Netherlands

[66] Forum, FAQ, chat- or video/audio conference function, etc.
* Changed means instead of a Euro-Mediterranean context a Dutch context.
** Extended means not only theatres, but also museums.

The table shows comparability of the SWOT analysis between the Dionys project and of the new cultural project in The Netherlands. It shows which strengths, weaknesses, opportunities and threats are available in each project.

The target group of the new cultural project are only Dutch citizens. Therefore the online multilingual environment is not available in the Dutch situation and this project does not offer the opportunity to have experiences with collaboration with other countries for IBM NL.

In The Netherlands there has been created an information system already where people can find news about theatres in The Netherlands.[67] Currently this information system does not provide many materials, photos, audios and videos. It is not the purpose of IBM to disable the already existing information system out of the market. This information system can be seen as a threat, but also as an opportunity; it can be a seen as a concurrent or it can be used as collaboration. The organisation which developed this information system has more experiences with theatres in The Netherlands than IBM. Therefore this organisation is a concurrent if it is not involved as partner of the new cultural project.

4.4.3 Stakeholders [68]
The next paragraph describes the parties that have to be involved in the project. These parties are ordered by the sequence during the development.

	Stakeholder	Description
1.	IBM Global & IBM NL	Does the project comply with the given requirements?
2.	Target groups	How do they think about the project?
3.	Communities	Which communities are convenient to involve?
4.	Partners	Which partners are suited for collaboration?
5.	Suppliers	Which devices are needed and which delivery terms are applicable?
6.	Media	The media are needed as ally; therefore their interests should be bear in mind?

Table 3: stakeholders ordered by the sequence during the development

- IBM Global & IBM NL
  In The Netherlands there is no foundation that carries out CCR-initiatives. This is being done by the department "Marketing" of IBM NL.
  The first step that should be made is to examine if the new cultural project complies with the current objectives and requirements of IBM Global and IBM NL. This has been worked out in paragraph 4.4.1.

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[67] Website
  www.theatercentraal.nl
[68] See chapter 3.3 Stakeholders

- Target groups

  Before starting with the development and collaborating with other parties, it is important to involve the target groups. Their opinion could be very important. Because this group is the end-user they influence the development of the project; they help enhancing the project by telling the relevant and irrelevant parts during the development. After having their opinion the communities, partners, suppliers and media should be involved.

- Communities

  The next step is to find communities to involve. The next parties that are given are necessary to involve in the new cultural project.

  o Universities

  This group is important for the knowledge, experiences, ideas and models that will be used in the project. For the project the following universities are needed in the project:

  - Universities with the knowledge about arts and culture. They can deliver information about the newest innovations in this area, because of its theatre and museum related character it especially needs information about arts and theatrical events.
  - Universities with the knowledge about education. This party has to develop the training programs for the children at schools.
  - Universities with the knowledge about ICT. The information system can be developed in collaboration with ICT-universities. IBM has the opportunity to offer these universities some of its knowledge, experiences, software and hardware.

  In collaboration with the universities, assignments for the students can be developed. Students of the arts and culture universities could not only provide information, but also use this information system as a source for their study. Students of the education universities can provide parts of the training lessons and can give lessons to the children at schools.

  For the ICT issues of the information system can be done by students of the ICT-universities. These issues are assignments like creating a database structure, programming and design. The ICT resources will be IBM software and hardware. In cases that the universities do not have the knowledge about these resources, IBM needs to offer courses about these resources to the universities.
  The universities can also be seen as a partner.

  o Researchers

  Researchers in the arts and cultural fields can use the information system to promote their experiences and results of their surveys, besides providing information for the information system.

- o Theatres and museums

This party will offer the (news-) information about the arts and cultural area. This information includes special events, addresses of the buildings, etc. These parties can be also seen as partners.

- o Schools

The information system offers lessons for children that can be used in classes. Related to these lessons IBM and its partners offer the possibility for the schools to have an excursion to some theatres and museums. (waarom stakeholder)

- Partners

  After involving communities there should be involved the partners.

  - o IBM NL

  Because IBM NL has the knowledge, experiences and devices for developing such projects; therefore they will develop the information system of this project. Besides IBM NL can offer some employees.

  - o Theatres and museums

  Regarding to the Dionys project there must be one theatre and one museum involved in the project which will upload new data. In the Dionys project there was the Piccolo Theatre which uploaded the new data. In the new project museums are also part of the content. Therefore a theatre with knowledge about theatrical news events must be involved and a museum with the knowledge about museums in The Netherlands.
  Besides individual theatres and museums should be acquainted with the new cultural project so they can also offer information.

  - o Sponsors

  The new cultural project needs knowledge, money, experiences and human resources to develop. The sponsors could be some theatres and museums, but also other companies which are interested in arts and culture.
  Issues to consider:

    - A sponsor may not make terms.
      It might happen that a sponsor makes terms before sponsoring. These terms might be at the cost of the content and the neutrality of the project. For example, a sponsor might make a term that they only make a sponsoring if there is a direct link on the main page of the project to the paintings about e.g. Van Gogh.

    - Sponsors that only offers money.
      Because the development costs money IBM needs partners to share the costs. But IBM does not prefer partners who only offering money; IBM does not want to link their good name to every company.

An example of an organisation that is accepted for sponsoring is the government. IBM does not have to link their name to the government when they give subsidies.

- Preferred sponsors.
  The best sponsors are those who have advantages of the development of the project. For the new cultural project these groups are theatres, museums and universities. These groups can make gifts by offering knowledge, money, experiences and human resources.

- Media
  After the development of the project it should be promoted. For this task IBM NL has a department 'Communication' that has a lot of contacts with newspapers, television stations and magazines.
  This media could also be a way for IBM, partners and communities to enhance their image. For example, the project that Italy IBM Foundation developed for the museum Poldi Pezzoli in Milan was written positively in many magazines. [69]

4.5 Stumble block
The next paragraph describes the stumble block of the Dionys project that has been identified.

4.5.1 Doesn't receive enough information
This current stumble block of the Dionys project is a good example of a situation that should be prevented in the implementation in The Netherlands.

4.5.2 Possible solutions
In this paragraph there are described a few possible solutions to prevent this stumble block, based on the field work done in Milan.

- Donate money for extra personal. [70]
  At the moment Italy IBM Foundation is in negotiation with her partners to come to a solution for this issue. The solution they want to offer is to donate money for extra personal which will support and deliver information for the website.

The next preventive measures can be taken for the new cultural project. These measures are given by an interview with dr. Giovanni Soresi [71] and Stefano Mazzotti [72].

- Convincing involved groups.
  Before involving the groups of theatres, universities and research centres, is it important that these groups are convinced that it is important for them and for the whole Dutch cultural area.

---

[69] Interview Lavinia Galli, museum Poldi Pezzoli
[70] http://www.museopoldipezzoli.it/
[71] Piccolo Theatre, partner of the Dionys project
[72] Employee Italy IBM Foundation

- Give a reward to the centres that deliver information for the website.
  The institutes that (often) deliver information could be rewarded. For example they can be rewarded by placing them in a good picture on the website which in turn would mean good publicity for them.

- Combine existing programs with the website
  The information system can be combined with programs like an agenda/organizer that is connected with the agenda of the involved institution. For example, if the organizer of a theatre is connected with the website, the dates of the events of that theatre can be automatically shown in the website.

- Commit institutions to deliver information.
  This website is a good publicity for the associated institutions. Some rules can be made, for example, that they have to deliver (important) information at least ten times in one year, otherwise visitors of the website cannot find any information about the institutions anymore.

- Important information temporarily accessible.[73]
  For example in the website of the museum Poldi Pezzoli there is the possibility to view information in the 'press office'. This information is temporarily available so the visitor.

4.6   Technical solution

4.6.1 Hardware and software
At this moment the technical solution described in the chapter about Dionys (paragraph 3.5) can be adopted for the new cultural information system in The Netherlands with the same hardware. There is no need to use other hardware and software because the technical infrastructure of the new cultural information system is comparable with the one of the Dionys project.
Version Lotus R6/Lotus Domino Utility Server and Lotus Designer 6 can be replaced by the new version 7.

---

[73] Interview Lavinia Galli, museum Poldi Pezzoli

In the next table an overview of the hardware solution of the Dionys project and the new cultural project in The Netherlands is given.

	Dionys	New cultural project
Hardware		
Server	Server IBM eServer xSeries	Server IBM eServer xSeries
Software		
Operating system	Redhat Linux	Redhat Linux
Administration tools	Lotus R6/Lotus Domino Utility Server	Lotus R7/Lotus Domino Utility Server
Developing	Lotus Designer 6	Lotus Designer 7

Table 4: overview hardware solution Dionys and new cultural project in The Netherlands

4.6.2 Hardware extensions

To give the new cultural project a surplus value in comparable to the Dionys project, a sms function could be used to provide information to Dutch citizens and a webcam option could be used.

In The Netherlands almost everyone possesses a mobile phone. There is an increase of companies that provides information using sms[74]. By offering the sms option the information system could me more useful for people, because they will not miss all important news facts in the cultural field.
To enable this option, the server of IBM needs to be connected to a sms-server which will send the high-lights of the cultural area in The Netherlands.

Some museums have a webcam available[75]. The new cultural project can offer museums and theatres the option to connect a webcam to the information system. By offering the webcam option, visitors can view within the theatres and museums using the information system can be seen as a promotion for this theatre or museum. To offer the webcam option a webcam and a webcam-server is needed.

4.6.3 Future technical resources [76]

In the next paragraph some technical devices are described that can have influences in the future. At this moment it is not necessary for the cultural information system to have the options given beneath, but it is recommended to be aware of it in the development of the cultural information system. Therefore it is involved in the design of the digital architecture.

---

[74] For example, the newspaper "Volkskrant" offers this way of using new media already for news facts in general
[75] Museums of the initiative Try Science that IBM NL carries out
[76] Gartner (2005), Hype Cycle for PC Technologies.

- PDA[77] / MDA[78]
  These devices are small computers with a full-colour screen, operating system comparable with Windows XP and can be used as a personal organiser to manage the users agenda, contact persons, phone calls and tasks. It has also multimedia functions like listening music, watch and record movies. It can be extended with a navigator.

- Tablet PC'S
  Tablet PC's are comparable to a normal PC, but they are more compact and the software is designed to use a touch screen without a keyboard. Gartner expects that Tablets are now an "adolescent" technology, but that they still have "four barriers to overcome: lack of OS integration, lack of applications support, ergonomics and price premium." However, Gartner expects that each of these "challenges will be addressed by 2006."

- E-Payment
  A lot of products can be bought using the internet. These payments are often going by credit card or VISA card. In the future the system can have the option to buy for example theatre showing tickets using the cultural information system.

- Three-dimensional LCD displays
  Gartner believes that the target audience for still "embryonic" 3D LCD displays is limited to "home users or selected vertical industries," and that the lack of an industry standard, 3D apps, and problems with "the health/safety issue of eyestrain must be resolved" before we will see 3D LCD displays catch on.

- Biometric authentication
  There's an upswing of security resources like fingerprints devices[79], iris scans, etc. In the future these resources will be used for authentication.

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[77] Personal Digital Assistants
[78] Mobile Digital Assistants
[79] http://b2b.sony.com/Solutions/subcategory/security/biometrics/Fingerprint_Identity_Device
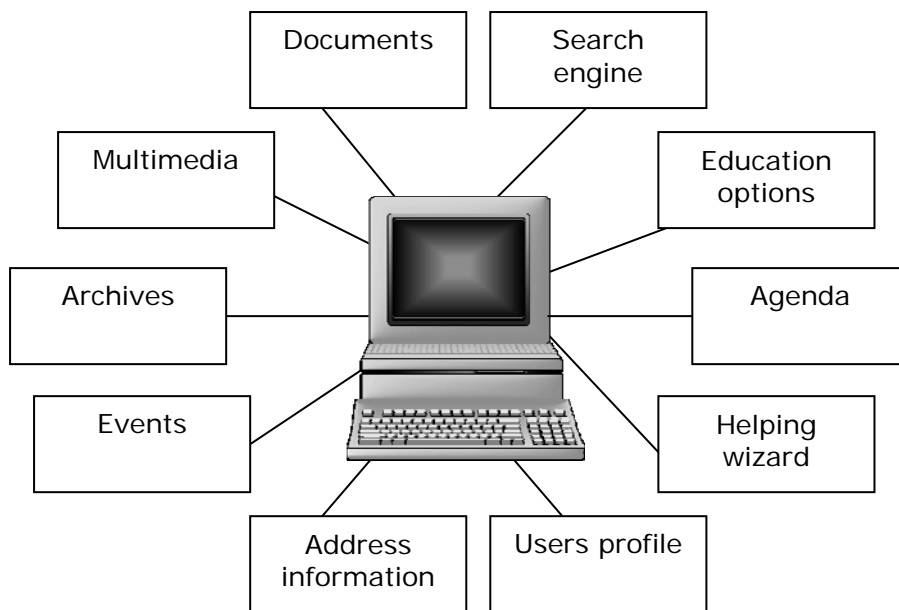
4.7   Application solution

Figure 8: rendering application solution for the new cultural project in The Netherlands [80]

- Find information

  The most important purpose of this cultural information system is that people can find information about cultural events in The Netherlands. The information system will contain:

  - Documents: these documents contain, just as the Dionys project, information about news, reviews, material, schedules and (historical background of) theatres and museums.
  - Multimedia: in the new cultural project a lot of information will be represented by using photos, audios and videos of most important shows.
  - Archives: it is possible to navigate through shows, exhibitions, lectures, press conferences navigating through materials presented by different cultural institutions.
  - Search engine: there will be a search engine available to find documents. This search engine can be compared to the search engine of Google®, but it only searches for documents that are available in the information system.

- Agenda

  The agenda option is comparable with the agenda option of the Dionys project but in a Dutch context. The agenda will contain:

  - (Special) events: users can be informed by the information system about (special) events in The Netherlands.
  - Location: the information system provides practical information like the addresses, phone numbers and opening times of the cultural institutions.

---

[80] Based on the application solution of the Dionys project

- Education options
  The information system offers lessons for schools and the possibility to use this information system in classes. In this way culture can be introduced by scholars to students using information technology.

- Helping wizard
  There will be a helping wizard[81] available in the information system that will help visitors to find the information they wanted. Users will have the possibility to use the helping wizard or to ignore it.

- Users profile
  By registering on this information system users will have more opportunities:

  - E-mail/sms function: Users can choose if they want to be informed if there are some special events or information[82] in the cultural area. Users can choose the medium they prefer to be informed; e-mail or sms.
  - Creating preferences: by configure preferences the user will receive the most important information for him/her by opening the website. The information will be shown to the users preferred view like colours, lay-out, etc.

4.8   Conclusion

In The Netherlands there is no good system available for people to find information about arts and culture. The digital architecture of the new cultural project in The Netherlands is based on the digital architecture of the Dionys project that is developed by Italy IBM Foundation.

An information system is a good solution for Dutch people to find information about arts and culture. For this information system the same hardware and software of the Dionys project can be used, only it is recommended to use the newest version of this software.

In the Dionys project there has been observed a stumble block that the information system didn't receive enough content to keep it up-to-date. This can be prevented in the new cultural project.

For this project it is recommended to be aware of possible hardware solutions that might be used in the future.

---

[81] Comparable with the paper clip in Microsoft Word.
[82] The opening of new museums, new theatre scenes, etc.

5. Conclusion

5.1 Research question

Is it possible, based on initiatives of IBM Milan that help in providing solutions for cultural topics in Italy, to come to a model for a digital architecture for the implementation of an initiative, which will provide a solution by using ICT for a cultural topic in The Netherlands?

Before formulating an answer to the research question, in paragraph 5.5, the sub questions will be considered.

5.2 Architecture principle related to Corporate Community Relations

The first sub question is

> *Which are the architecture-principles and objectives of IBM related to "Corporate Community Relations"?*

The main goal of the strategy Corporate Community Relations is to design and develop research and experimental projects using information technology to benefit schools, arts & culture and social. Angelo Failla believes that this strategy consists of 5 main principles.

1. Make use of ICT/technologies in all projects.
2. Create models that can be replicated.
3. Offer mainly knowledge, skills and human resources in stead of money.
4. Focus on a few main problems.
5. Have strong relations with communities.

IBM is a mature company that is doing a lot of research into new technologies. Therefore, it is important to make use of technology in all projects. For the effectiveness and the efficiency models should be created that can be transferred to another context. IBM has a lot of experience, knowledge and skills and wants to offer this to the community to help find a solution for its needs.

Italy IBM Foundation focuses on a few main problems so they have after years a lot of knowledge, experiences and skills of this subject. All projects will be developed in collaboration with universities, schools, museums, theatres, not-for-profit organisations or foundations.

5.3   Initiatives of Italy IBM Foundation

The second question of this research is related to the initiatives of Italy IBM Foundation.

Which are the initiatives that Italy IBM Foundation applies?

Italy IBM Foundation applies their initiatives in three different areas; education, arts and culture, social.

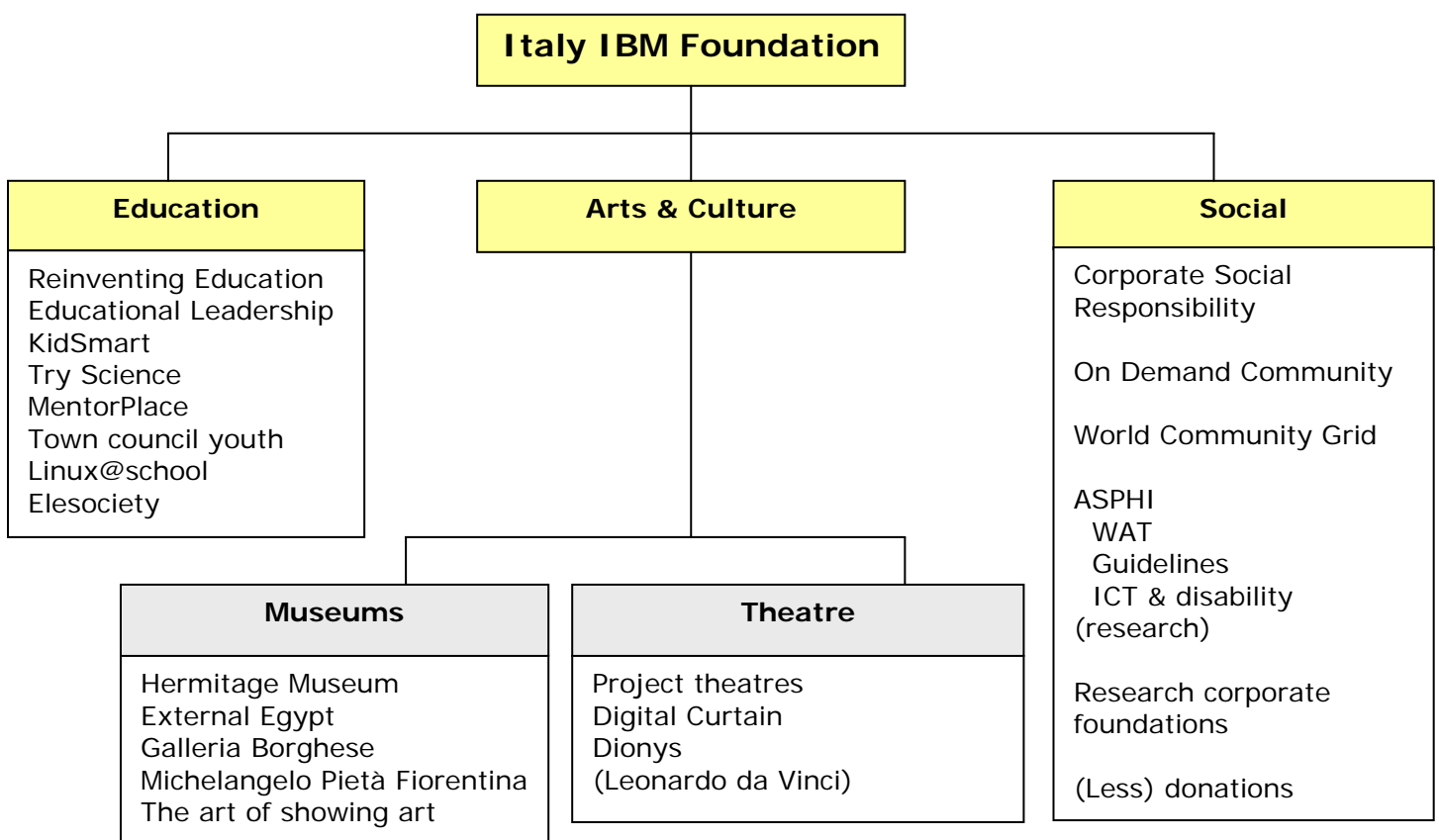The next figure shows all initiatives categorized by area.

Italy IBM Foundation

Education

Reinventing Education
Educational Leadership
KidSmart
Try Science
MentorPlace
Town council youth
Linux@school
Elesociety

Arts & Culture

Museums

Hermitage Museum
External Egypt
Galleria Borghese
Michelangelo Pietà Fiorentina
The art of showing art

Theatre

Project theatres
Digital Curtain
Dionys
(Leonardo da Vinci)

Social

Corporate Social
Responsibility

On Demand Community

World Community Grid

ASPHI
  WAT
  Guidelines
  ICT & disability
(research)

Research corporate
foundations

(Less) donations

Figure 9: all initiatives developed by Italy IBM Foundation

5.4   The Dionys project

The next sub questions are about the initiative Dionys that Italy IBM Foundation applies.

Is there an initiative that can be implemented in a comparable way in The Netherlands?

The initiative Dionys is an initiative that is applied in many countries around Mediterranean regions. Because it is a multicultural initiative it is a good initiative that can be applied in The Netherlands.

	Dionys	New cultural project
Business solution		
Goal	Promote the initiation of a network between Theatres, Universities and Research Centres by fostering cultural exchange between European and Mediterranean regions.	Promote the initiation of a network between Theatres, Museums, Universities and schools by fostering cultural exchange for Dutch citizens.
Country	Italy	The Netherlands
Hardware solution		
Server	Server IBM eServer xSeries	Server IBM eServer xSeries
Software solution		
Operating system	Redhat Linux	Redhat Linux
Administration tools	Lotus R6/Lotus Domino Utility Server	Lotus R7/Lotus Domino Utility Server
Developing	Lotus Designer 6	Lotus Designer 7

Table 5: overview of solutions Dionys and new cultural project in The Netherlands

The table above gives an overview of solutions that can be applied in The Netherlands. The completion of this table will be explained by the next sub questions about the Dionys project.

Which are the goals and objectives of these initiative?

- An international agency on the Internet where you can find a large number of contacts, information, ideas and where you can search documents about the world of the European theatre.
- A Network of Theatres, Universities and Technological research institutions that operate in the Mediterranean area realized in a virtual shared place.
- An opportunity for professional development for the operators in the sector and an offer of services for interested members of the public.
- An incentive to exchange professional resources and an opportunity to gain knowledge of different expertise, cultures and languages.

- To realise educational and vocational training programs by creating an advanced and uniform structure of services.
- Helping improving awareness of European cultures through the Theatre, a real form of art which can cross many different fields, forming, enriching and entertainment.

What kind of hardware and software solution is used in this initiative?

Advanced high-tech with IBM software (Lotus R6/Lotus Domino Utility Server and Lotus Domino Designer 6) is used in the project Dionys. The hardware and software solution offers people in the European and Mediterranean regions cultural information.

Are there stumble blocks in this initiative, and how can they be overcome?

The administrator of the project Dionys did not receive enough information to keep the website up-to-date. Possible solutions to prevent this are:
- Donate money for extra personal
- Convincing involving groups
- Give a reward to the centres that deliver information for the website.
- Combine existing programs with the website
- Important information temporarily accessible
- Commit institutions to deliver information

Is there a model that Italy IBM Foundation uses to implement initiatives?

Italy IBM Foundation uses a model for all projects. This model consists of the four areas: areas of intervention, research, testing, training and communication.

5.5   Central Research question

According to the sub questions it can be concluded that a model can be created for a digital architecture, based on the Dionys project, to start a new initiative which offers a solution for a cultural topic in The Netherlands.

Before starting the development of the new cultural project in The Netherlands based on the Dionys project that has been developed in Italy, there are some topics to be aware of:
- Stakeholders
  Before starting the development of the project, the stakeholders IBM Global & IBM NL, target groups, communities, partners, suppliers and the media should be involved.
  - o Target groups will be also involved not only before, but also during the development.
  - o The media is a party that should be made a stakeholder; in a normal project the media is not needed, but in the CCR-projects the media is needed for the image of IBM and its partners and for the promotion of the

project. Therefore the project must be developed in such way it is interested for the media.

- Differences between Dionys and The Netherlands
  - o The target group of the new cultural project are the Dutch citizens. Therefore the new cultural project in The Netherlands is only in Dutch while Dionys is multilingual.
  - o Dionys is an information system only for theatres and the new cultural project concentrate itself also on museums.
  - o One of the information needs of citizens is to have good support. The new cultural project will give the opportunity for support using e-mail, phone and FAQ, while Dionys only offers e-mail as possibility for support.

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6.2   Interviews

Italy IBM Foundation
Angelo Failla, director
Anna di Summa, responsible for arts and cultural initiatives
Morgana Stell, responsible for education initiatives
Stefano Mazzotti, responsible for social initiatives

IBM NL
Warner Dijkhuizen, Corporate Community Relation manager

Piccolo Teatro
Dott. Giovanni Soresi, contact person Dionys project

Museo Poldi Pezzoli
Lavinia Galli, partner of Italy IBM Foundation

6.3   Presentations

Piccolo Theatre

Italy IBM Foundation

6.4   Websites

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7. Table of figures

7.1 Figures

7.2 Tables

Appendices

Appendix A: Italian Projects

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                          ┌──────────────────────────┐
                          │   Italy IBM Foundation    │
                          └──────────────────────────┘
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Education	Arts & Culture	Social

Reinventing Education
Educational Leadership
KidSmart
Try Science
MentorPlace
Town council youth
Linux@school
Elesociety
		Corporate Social Responsibility
		
		On Demand Community
		
		World Community Grid
		
		ASPHI
		  WAT
		  Guidelines
		  ICT & disability (research)
		
		Research corporate foundations
		
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Museums	Theatre
Hermitage Museum External Egypt Galleria Borghese Michelangelo Pietà Fiorentina The art of showing art	Project theatres Digital Curtain Dionys (Leonardo da Vinci)

Social (Corporate Social Responsibility)

World Community Grid
World Community Grid's mission is to create the largest public computing grid benefiting humanity. Our work is built on the belief that technological innovation combined with visionary scientific research and large-scale volunteerism can change our world for the better.

To join, volunteers simply download a free, safe and small software program onto their laptops or home computers. When idle, your PC will request data on a specific project from World Community Grid's server. It will then perform computations on this data, send the results back to the server, and ask the server for a new piece of work. Each computation that your computer performs provides scientists with critical information that accelerates the pace of research.

Website: http://www.worldcommunitygrid.org

ASPHI
A strong relationship links the IBM Italy Foundation to the ASPHI Foundation, an association for projects directed to integrate people with disabilities into the work force, in scholastic life as well as in everyday life.
The IBM Foundation has helped the ASPHI for the past few years through the assignment of two professionals and by providing financial contributions for specific projects using ICT to help reduce the effects of handicaps. The Projects can be divided into 4 main areas:
- Labour: Professional training and work involvement.
- School: Teacher training and software design.
- Rehabilitation: Increasing the quality of life for more autonomy.
- Information: Opportunities offered by ICT.

Website: http://www.asphi.it
Project WAP: http://www.webadapt.org

(Less) donations
IBM prefers not only to donate money to projects, but they prefer to develop solutions that encourage the resolving of community in need.

Education

Reinventing Educating
IBM has formed partnership with school districts to develop technology solutions designed to help support schools to reform efforts and raise student achievement.

Educational Leadership
It is a part of the Reinventing Education project. It is designed to develop the best practices of co-operational web-based teaching models and to spread the excellence centres within the school system.

KidSmart
This project is focused to stimulate children (3 until 7) with the education of language and communication skills.

This initiative is meant to help educating children in the kindergarten. A lot of these children aren't in possession of a computer at home. These children don't have the opportunity to get used to use a computer. Because of these computers children (age 3 until 7) can get used to use computers and besides the computers helps them to enhance their communication- and language skills. There is a website for the parents and teachers for the children that supports support and supports trainings for the teachers.

This programme started for the first time in 1998 in America with the name 'KidSmart Early Learning Program'. On the 16th of January 2003 the kindergarten 't Klimhof in The Hague was the first school with a KidSmart computer in The Netherlands.

Website: http://www.kidsmartearlylearning.org

Try Science

Try Science is a project to stimulate interests by children (8 until 12) for technique and science. It is an application that is developed in collaboration with the New York Hall of Science and different science- and technological museums.

In this application younger people could do scientific experiments on a gamesome way, so they could see that technique and science is fun.

Try Science consists of three parts: kiosk, a website and a (lesson) programme.
The kiosk is a computer that is easily to manage by children with the age between 8 and 12 years old. The location of this kiosk is in (scientific or technical) museums.
The website (http://www.tryscience.org) gives an impression of the kiosk. The children can choose their own language. In this website children can learn about science and do practical experiences.
There is also a (lesson) programme for teachers and parents. Teachers can use the website to do experiences during the lessons.

MentorPlace

The purpose of this project is to help students to raise their achievement and to show them a part of the work environment. The students have to make assignments and can use e-mail, chat sessions and videoconferences to accomplish these assignments.
Website: http://www.mentorplace.org

Town council youth

This project is applied in Italy. It is an educational project that makes use of information technology for its accomplishment.

Objectives of the Project:
- to involve the children in experiences of planning, accomplishment and evaluation of the interventions reported to the cultural and social growth of the town;
- to make acquaintance the formal procedure of operation of a public administration;
- to visualize and to make acquaintance to the adults the requirements of the children;
- To promote concrete actions of solidarity.

Linux@school

The goal of this project is to spread the knowledge of Open Source in High Level schools, with particular attention given to the operating system Linux. In this project students and teachers have the opportunity to perform tests and experimental activities, to create educational content and to help improve the teaching

process. The project is also meant to promote the study, development and documentation of solutions that encourage the creating of virtual communities within the schools. Students and teachers can experiment with remote access to computer systems and services.

Elesociety
The e-Learning Society website presents the results of the study on e-learning life cycle.

Scholars programme
http://www.developer.ibm.com/us/en/university/scholars/products/

Arts & Culture

Theatre:
Digital Curtain
This project uses a broadcast system that offers the ability to record, store and (quickly) edit live stage performances. This broadcast system is adopted by La Fenice of Venice.

Whole Opera performances, stage sets, musical scores, photographs and music will all soon be accessible across the world, to be leveraged and enjoyed by increasingly broad and diverse audiences including students, researchers or simply opera and theatre lovers.

For IBM and its Foundation the partnership with La Fenice is a further, strong proof of the effectiveness of the technology-culture combination also to enhance the sharing of content which – otherwise – would remain the privilege of a select few. The Theatres Project, was launched approximately ten years ago with the Teatro La Scala di Milano – after achieving in 1998 a merit recognition at the Guggenheim Business and Culture award and has grown over the years, through the collaboration relationships with the Rossini Opera Festival of Pesaro, the Teatro dell'Opera of Rome, The Arena di Verona Foundation, The Piccolo Teatro of Milano and the Franco Parenti Theatre.

Website: is not yet available

Dionys
It's a network between theatres, universities and research centres. It's a virtual design of theatre sets.
The project's goal is to promote the creation of a network between Theatres, Universities, and Research Centres, through the implementation of a highly advanced technological infrastructure, with the aim of fostering cultural exchange between European and Mediterranean regions.

The web site has been built for both public and private users; besides an open area, where you can find a broad range of information and services related to the theatre, there is also a "Members Area", where professionals can meet and discuss subjects of common interest.

The open area is composed of several sections:

- News, a collection of shows and events within the Mediterranean area;
- Glossary, theatrical terms are explained and translated into four languages along with images;
- Press Collection, a collection of articles and reviews published in the main European magazines and newspapers;
- Agenda, an area having all the future events presented by the Dionys staff;
- Directory, a list of the main web sites dedicated to the theatre.

Website: http://www.dionys.org

(Leonardo da Vinci) – Not started yet
It's a website for the research of a development of European artistic training.

Website: http://www.leonardovip.info

Theatre projects:

- Theatre of the opera of Rome

There has been created a three-dimensional model of the theatre and particularly of the stage. There is an analysis of the possible solutions of shapes, colours, lights and point of view. The result is a perfect simulation, in pertaining to perspective limits that of illumination, of the different stages introduced in a realistic space, with a considerable saving of time and of money.

Website: not available

- The Arena of Verona

The IBM Italy Foundation donated hardware (Mpro Intellistation), software (Catia v.5) and training services to the theatre, with the aim of building specific skills for the virtual creation of set designs.

Moreover, the ICT solution adopted (Catia v.5 and PDM) lets the technical direction integrate the creation of the set designs with all theatre function involved in the production process, sharing all the information related to the production of the works:
Supplier lists, material availability and costs, working hours required, equipment availability, etc.

Website: not available

La Scala of Milan

In 1994 IBM Foundation donated an initial amount to the theatre, followed by the organisation of training courses to provide designers to create virtual sets.

Website: http://www.teatroallascala.org

Technology and museum:

Hermitage Museum

IBM designed and created a web site that gives a virtual tour of the entire museum, satisfying even the experts; advanced research, based on the content of the images and a 360° view of the

interior are just a few of the functions available at www.hermitagemuseum.org

This web site has the following characteristics:

- High resolution digital capture of 1500 works.

- An advanced search engine (35 results for each work of art).

- A system that adds a watermark design to each work of art.

Recently the site has been enriched with the new Virtual Academy section, which is divided into 3 different themes: Winter Palace, Time of Knights, and Ancient Egypt.

Website: http://www.hermitagemuseum.org

External Egypt

An extraordinary partnership between the Egyptian government and IBM has created "Eternal Egypt," providing worldwide access to more than 5,000 years of Egyptian history.

The Eternal Egypt project combines the most important locations, artifacts, people and stories from Egypt's history into an interactive multimedia experience. Three years in the making, the project has so far produced multimedia animations, 360-degree image sequences, panoramas of important locations, virtual environments, three-dimensional scans, real-time photos from Web cameras and thousands of high resolution images of ancient artifacts that weave together more than five millennia of Egyptian culture and civilization.

For the first time ever visitors to the new Eternal Egypt Web site at www.eternalegypt.org can enter a virtual reconstruction of Tutankhamun's tomb as it looked the day Howard Carter discovered the chamber in 1922, or view the Lighthouse of Alexandria as it appeared before it was destroyed in the 14th century. Viewers even can examine the face of the Sphinx as it looked 2,000 years ago.

The Eternal Egypt project includes three individual components focused on the collections "inside the walls" of prominent museums all around Egypt, historic sites throughout the country, and a virtual museum available to anyone, anywhere in the world with Internet access. These components are all based on an interconnected set of artifacts, places, and characters that form a complex content database.

Website: http://www.eternalegypt.org

Galleria Borghese

The Multimedia Cylinder is an innovative technological structure, donated by the Foundation to the Galleria Borghese in 1999 and updated in 2004, designed to provide the museum with a multimedia area for information and learning.

The cylinder can be moved vertically and hidden below floor level, leaving the space for an exhibition area.

Michelangelo's Pietà Fiorentina

In the museum of the Firenze Cathedral the Foundation installed a multimedia kiosk dedicated to the Michelangelo Buonarroti's Pietà Fiorentina, which is at tourists' disposal for a deeper analysis and a better comprehension of the masterpiece.

Website: not available

The art of Showing Art

"The art of showing art" is a report having the results of research done by the Foundation and the Centre for IBM e-Business innovation which analyzed the "customer experience" of the museum's visitors.

The project involved 10 museums, 5 in Italy and 5 abroad, which were selected on the basis of their importance (no. of visitors, prestige) and their location.

The study analysed the complex relationship between the museum and its visitor, with particular focus on the visitor's experience regarding the technology and communication channels used by the museums.

For each museum, the "customer experience" - which is "the set of all the aspects of the interaction between the customer and the organisation, its services and its products" - evaluated 5 customer profiles, which were family, students (one of which was disabled), elder people, teachers and managers, and 3 scenarios: Before, during and after the visit.
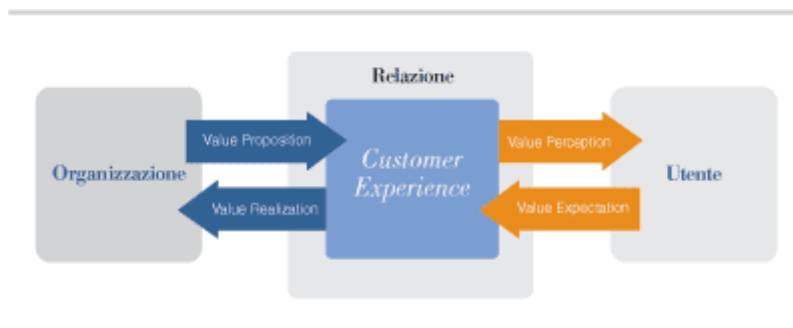
From this analysis it was seen how each museum involved in the study builds its relationship with the customer and how the customer perceives it. Based on this evaluation, the museums were divided into 3 categories:

- Leader, these museums represent the best practices both for the customer perception and the quality of the overall experience.
- Follower, these museums have a satisfactory score, but have some areas which could be improved.
- Laggard, these museums have much room for improvement.

The purpose of this study was not to determine a classification, but to provide the museums with a guideline used to improve some critical areas through specific actions, being a possible stimulus for their own potential.

Appendix B: Risks

This paragraph describes the most frequently risks scenarios when a new cultural project is developed.

In every project the requirements, purposes and conditions are given. But in reality the development and implementation of a project are not going by plan in most cases. By planning and executing of a risk analysis within the building of a digital architecture, the results of a project can be more guaranteed. Therefore it is important to estimate the factors that might effect the development and implementation of a project.[83]

This phase is not about the positive and negative consequences that might occur, but it is about to identify the factors that might be a threat for the development and implementation of a project.[84]

The next table gives a summary of the most frequently risks scenarios, the cause of the risks and preventive measures to reduce the chance of occurrence.[85] The described risks and preventive measures are given by Italy IBM Foundation which has experiences with those scenarios for years. The risks that are given are risks that might occur in every project. This is not an exhaustive list of all the projects, of course.

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[83] Margareth Jonker & Ed Kruithof, SIM3 in Theorie
[84] Bergen van Bruggen, Effectiviteitsmeting en risico analyse van informatisering
[85] Margareth Jonker & Ed Kruithof, SIM3 in Praktijk

Nr.	Risk scenario and description	Possible causes	Preventive measures
001	There is not enough money.	- A miscalculation of the costs of the project at the beginning of the project has been made. - Partner may leave the project. - Price increase.	- Let more people calculate the costs of the project. - Execute an investigation for marketing changes.
002	Partner may leave the project.	- Bankrupt. - Partner changes his priority. - Partner reorganizes the company. - Economical regression.	- Check partners before involving them into the project. - Check other possible partners who might be suitable to replace the current partner.
003	Partner not reliable.	- Partner starts its own project which is comparable. - Management might be corrupt. - Partner does not carry out the agreements.	- Check partners before involving them into the project. - Make good terms before collaboration with a partner.
004	The solution does not work.	- There are faults in the software or hardware.	- Solution must be well tested. -
005	Supplier cannot deliver on time.	- The hardware is not in the store of the supplier.	- Order hardware in time. - Order hardware from different suppliers.

Table B1: summary of the most frequently risks scenarios [86]

Risk plan
Despite the fact that there are preventive measures against the risks, it could happen that some risks occur during the project. The change of occurring is little, but it is important to take it into account this possibility. In a worst-case scenario these risks could lead to the project being stopped. The next table shows some measures that has to be taken when the risks occurs.

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[86] Interview Stefano Mazzotti, Italy IBM Foundation

Nr.	Measures to be taken when risk occurs
001	- Find (new) sponsors to finance the project. - Reduce the project.
002	- Replace partners with another partner. - Reduce the project
003	- Stop collaborating with this partner.
004	- Developers must solve the problem within a short timeframe.
005	- Switch to another supplier.

Table B2: summary of measures of occurring of the most occurring risks

001 There is not enough money.
For every project the costs need to be calculated. There are many causes which can result in a shortage of money during the project. For example, during the development of a new project there are always some unforeseeable costs. When the unforeseeable costs are getting to high, it could lead to the problem that there is not enough money to continue the development of this new project.

When this risk occurs, IBM has to ask for more money. This can be done by asking more money from the management of IBM or by asking money to the partners that are involved in the project. But if the costs are getting to high, a solution is to involve new partners in the project.
In a bad case scenario the project has to be downscaled. For example, if the outline of the project was to develop the project for seven countries, it can be reduced to four countries to reduce the costs.

002 Partner may leave the project.
It is possible that a partner may leave the project during the development. When a partner leaves the project, the costs can become to high, some experiences can be missed, etc.

To continue developing the project with enough partners, it is recommended to involve a new partner who is comparable to the partner that left the project.

003 Partner not reliable.
A bad scenario for IBM is that a partner who is involved in the project is not reliable. For example, if one of the partners committed fraud, it can damage the image of the partner and the image of IBM as well.

In this case it is important that IBM stays in a good picture in the media. It must be clear that IBM does not support a partner who commits fraud. A good way to express this is by stopping the collaboration with this partner.

004 The solution does not work.

There is always a risk that the solution does not work. Therefore it is very important to test the solution many times. When a solution does not work it can severely damage the image of IBM. For example, when IBM wants to present the solution to the world via the press and the software or hardware doesn't work, it is an embarrassment for IBM.

If this happens it must be solved within a short time. The developers must do everything to fix the problem.

005 Supplier cannot deliver on time.

In some cases a supplier can not deliver on the time that has been agreed. This can slow down the development of the new project.

The preference supplier is IBM (if the product is made by IBM), but if they cannot deliver on time, then the products must be ordered from another supplier.