ABSTRACT
The definition of portfolio for project management states that portfolio is a collection of projects and program and other work that are grouped together to facilitate the effective management of that work to meet strategic business objectives (PMI, 2006). It is necessary to select the right projects to be conducted; otherwise too much effort and money will be invested in wrong projects. The main objective of this paper is to analyze the theory of portfolio management for projects and check its applications in the Brazilian market. Three companies in the Brazilian market were studied, an international bank, a Brazilian public company in the transportation market and a multinational electric manufacturer.

INTRODUCTION
The modern portfolio theory was first described by the Nobel Prize in economics Harry Markowitz in 1952. In brief, it describes how, for a given risk level, there is a specific mix of investments that will achieve an optimal return (LEVINE, 2005). Portfolio management is formally defined as a dynamic decision process, whereby a business list of active new product (and development) projects is constantly updated and revised (COOPER et al., 1997). In this process, new projects are evaluated, selected, and prioritized; existing projects may be accelerated, killed, or reprioritized; and resources are allocated and reallocated to active projects.

The portfolio concept applied to projects comes from economics and management. Some research has been developed in the last years about project portfolio, as the integrated framework for project portfolio selection proposed by Archer & Ghasemzadeh (1999) that states that the task of selecting project portfolios is an important and recurring activity in many organizations and proposes a framework that may be implemented in the form of a decision support system and a prototype system to support the decision making activities.

PROJECT MANAGEMENT
The project management was developed as a leadership concept of interdisciplinary activities with the objective to solve a temporary problem. This characteristic permits the project management to reach a high degree of innovation in the presented solutions to more complex’s works (LITKE, 1995).

In the most significant areas of application, new products and services are created through projects, what could be demonstrated by the increasing number of companies that are adopting the project management methodology (KERZNER, 2001).

According to the PMI (2004) a project could be defined as a temporary endeavour to create a unique product or service and project management could be defined as the art of coordinating activities with the objective to reach the stakeholders expectations.

Rabechini Jr and Carvalho (2003) argue that in all the project definitions it is possible to realize two intrinsic concepts: temporality and uniqueness. The temporality...
means that all projects have a well-defined beginning and end. The uniqueness
or singularity means that the product or service created by a project is different
from all the others already made.

PORTFOLIO MANAGEMENT
The portfolio concept applied to projects comes from economics and management.
But just recently a standard was properly defined for project management. The
definition of portfolio for project management states that portfolio is a collection
of projects and/or program and other work that are grouped together to facility
the effective management of that work to meet strategic business objectives (PMI,
2006). In the same way, PMI (2006) defines portfolio management for projects as
the centralized management of one or more portfolios, which includes identifying,
prioritizing, authorizing, managing, and controlling projects, programs, and other
related work, to achieve specific strategic business objectives.

The Figure 1 presents an example of a portfolio and its components.
All of the components of a portfolio present some common characteristics:
• They are investments made or planned by an organization;
• They are aligned with the goals and strategic objectives of the organizations;
• Typically they present some specific characteristics that allows an organization
group them in order to a more effective management;
• The components of a portfolio are quantifiable, that means, they can be
measured, ranked and prioritized.

The portfolio should also be aligned with the strategy of the company. It should
be the way the strategy is implemented by the company. Its components must come
from the strategic objectives and goals of the company. The output of the portfolio
must increase the project and program activities authorized by the company. This
process is presented in the Figure 2.

PMI (2006) also presents the phases of the portfolio management. They are
organized in two groups:
1. Aligning Process Group:
   • Identification;
   • Categorization;
   • Evaluation;
   • Selection;
   • Prioritization;
   • Portfolio Balancing;
   • Authorization.
2. Monitoring & Controlling Process Group:
   • Portfolio Review and Reporting;
   • Strategic change.

Figure 3 presents the phases of the portfolio management.
There are lots of tools that the theory presents to evaluate and manage the portfolio.
One of the most used is the bubble chart. The Figure 5 presents one example.

BRAZILIAN PROJECT MARKET
The Brazilian market for projects could be defined as a big one, considering the
number of big projects in the ongoing phase and the value of each one, and all of
them. The market is also increasing. In the last year, the total value of the projects increased in 19%, from US$ 83.6 billion to US$ 99.6 billion, as presented in the table below.

The data presented below represent the following economy sectors:
- Energy
- Oil and gas
- Water
- Telephone
- Transportation.

**METHODOLOGY**
For the analysis of the practical application of portfolio management, three case studies were selected. For the cases studies, three companies in the Brazilian market were studied, an international bank, a Brazilian public company in the transportation market and a multinational electric manufacturer. The cases were selected to compound a multi-varied scenario were the portfolio management could be evaluated.

**CASE STUDIES**

**International Bank**
The analyzed bank has more than 170 years and started its operations in Brazil in the beginning of the last century. The main area that uses project management in the bank is the information technology. This area owns 95% of the projects of the bank.

*CASSTUDIES*

**International Bank**
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The method used to select the projects for the portfolio of this company is based in spreadsheets with three defined criteria: revenue to be obtained after the implementation of the project, cost of the project and strategic importance. For each criteria there is a grade related to some specific values defined by the top management. Table 2 presents a simple example of two projects evaluation.

**Brazilian Public Company in the Transportation Market**
The public transportation company analyzed in this study works simultaneously in three metropolitan regions, which includes 67 cities and a population of 23 millions of inhabitants. It attends 1.5 millions of passengers per day. It portfolio includes 12 projects and totalize US$ 383 millions. The tool used by the company to select the projects and control the portfolio is the bubble chart as presented in the Figure 5.

**Multinational Electric Manufacturer**
The electric manufacturer is a Europe based company, with more than 150 years, with 400,000 workers, placed in almost 200 countries. The company produces and installs a great variety of electrical and electronic equipments, in the great majority delivered to customers through specific projects adapted to the necessities of each one. The products innovation tax is extremely high and the products actually sold were developed maximal three years ago. Basically the company sells customized solutions to their customers.
In Brazil more than 50% of its gross sales are managed as projects. In the fiscal year of 2005/2006 this represents almost US$ 1.2 billion. This demonstrates the importance of good project management for this company. The tool used by the company relates the margin of the projects in the beginning of them and the margin in the closing of the project. This information is crossed in a graph as presented in the Figure 6, where the 220 major projects of the company are placed.

CONCLUSIONS
The conclusions obtained from this study could be grouped in two sections: adoption of portfolio management and tools used by the companies.

• The companies realized the importance of the portfolio management for projects and programs and are starting initiatives in order to implement methodologies to administrate the portfolio;
• There is not a standard tool used by the companies and the tools used by them are made inside the companies and not developed by a specific software provider.

Although the companies in Brazil are realizing the importance of portfolio management in the management of their business, there is some room for improvement for them in the portfolio management topic, for example, the selection methods are not as objective and systematic as presented in the theory.

The great challenge for the companies in general is to do more, better and faster, always with less. To achieve these objectives, the companies must be able to measure what they do, and how well they do. And it is here that portfolio management could help the companies.
BIBLIOGRAPHY
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