Grupo Pão de Açúcar

Silver Award 2006, South America; nominated by iProcess, Brazil

EXECUTIVE SUMMARY

This paper describes the experience of the implementation of workflow technology in Grupo Pão de Açúcar (GPA), the largest retail group in Brazil. Motivated by the necessity of adjustment to the Sarbanes-Oxley act, and of acceleration of critical processes execution, GPA began the usage of workflow technology. There are three developed workflow systems: the first, Investment Approval Workflow, being deployed in May, 2005. The benefits of workflow technology were quickly perceived, with the reduction of 80 percent of average process time and great increase of control effectiveness. For this reason, GPA is not only expanding the use of workflow technology, but also connecting IT and process disciplines, building a solid path into BPM direction.

OVERVIEW

Grupo Pão de Açúcar (GPA) previously known as Companhia Brasileira de Distribuição (CBD) is a strong and complex company that runs a great amount of business processes. Their business is based on a multiformat structure, with a balance between supermarkets and mega stores operating in 15 of 26 Brazilian states. GPA has 554 stores, 12 distribution centers and around 63 thousand employees.

In order to achieve greater control, higher agility, better efficiency and lower operational costs, GPA has decided to automate business processes using workflow technology.

The Investment Approval Workflow (IAW) was the first application of the workflow technology proposed by the company. The IAW solution has provided GPA the necessary flexibility in defining the approval group of each kind of document, without losing the basic idea that rules the responsibilities of their managers. Workflow has boosted agility and transparency resulting in 80 percent of total time savings. Paper documents have been replaced by electronic documents having review and approval activities controlled by a workflow engine. Its most common interface is e-mail that contains messages supplying the approver with the information needed for the decision making, demanding less time and effort in training the executives on using this technology. The following results where achieved within this past year: 50 users and near R$ 30 million on investments approved using the Investment Approval Workflow, distributed on around 250 instances of process for investments such as equipment acquisitions, software upgrade, construction and reform of stores and administration and security services.

The success of applying this technology at GPA has inspired the company to automate two other important business processes. The Resources Control Workflow (RCW), created to support the IT department, implements a complex process of approval and execution activities for access and restriction control for systems and technology resources of the company. This fulfills an important requirement of the Sarbanes-Oxley act. This workflow grants people restricted access to infor-

mation and resources designated for their positions. The exceptions must be approved and acknowledged by the proper manager. The Workflow for Outsourcing Management (WOM) supports the company on selecting, transferring and releasing workers from third parties, focusing on their competences. Executives receive the necessary information about costs related to these operations for their cost centers. Both projects followed the Investment Workflow regarding the approval flexibility expected for these processes. The WOM started production in May, 2006, and RCW is predicted for Q3 2006. Since they are outside the Awards' deadlines, they will be referenced only to allow a better comprehension of GPA's strategy.

GPA already has plans for raising investments on workflow solutions - on the enclosure of this paper, four new projects were under development.

KEY MOTIVATIONS FOR WORKFLOW SYSTEM IMPLEMENTATION

GPA is one of the most admired companies in Brazil, building a history of excellent customer service, innovation and social responsibility. GPA was founded in 1948 as a grocery store, and 60 years later has more than 500 stores. Its success has been recognized by several recent awards such as "The most admired retail company," "Excellence in E-Commerce," "Retail Community Service Award," "100 Best places to work" and "50 Best places for women to work".

Many factors, both internal and external, collaborated for the implementation of workflow technology at GPA. The following subsections illustrate the main motivations.

Sarbanes-Oxley Act compliance

Since the association of GPA to the French Casino Group, the company started to have shared negotiated at New York Stock Exchange and thus was affected by the requirements of Sarbanes-Oxley act. This means that many processes, specially those involving financial impact, had to be adjusted for an additional level of control, with a higher formalism of the exchanged information and total traceability.

As it is known, workflow technology offers excellent resources to implement this additional level of control. To GPA, it was specially important: i) guarantee of process integrity offered by the workflow technology; ii) the automatic and accurate recording of every execution step of the process; iii) the substitution of request and answers through e-mail by organized and well documented interactions through the workflow system. These functionalities where decisive for GPA's decision to employ workflow technology for the automation of processes related to the Sarbanes-Oxley act.

Tougher competition requires new levels of agility

Since 2000, when GPA became the leader of Brazilian retail market, the company has been constantly challenged to maintain its position. This pressure is made by Carrefour (today in second place) and especially from Wal-Mart, which due to a series of acquisitions (as happened to Bompreço, leader in the northeast of Brazil, and later to SDB, leader in south Brazil), have been aggressively expanding in the market. It is important to observe that currently the difference of sales between GPA (first place) and Wal-Mart (third place) is less than R$ five billion (US$ 2.28 billion) - in 2004 the difference was near R$ 10 billion (US$ 4.56 billion).

To maintain its current position and expand activities in the Brazilian market, GPA has announced an investment plan of R$ 1.5 billion (US$ 684 million) for 2006-2007, entirely financed by internal cash flow. This investment is directed to

the opening of 16 to 20 new hypermarkets, 40 to 60 supermarkets, renovation of existing stores, infrastructure and technology.

In this environment of daily frantic competition and heavy growth rate, business processes have to work in their best performance, without giving chances for flaws or delays. The Investment Approval process is one of the most critical, since most part (if not all) of the R$ 1.5 billion (US$ 684 million) investment will be analyzed through this process. In other words, the whole strategic plan execution could be slowed (or even halted) if this process' performance is low. This was exactly the situation in the end of 2004 - Investment Approval process was slow, unreliable, uncontrolled and totally paper-based.

Under these circumstances, GPA evaluated that workflow technology could be an allied, increasing process speed and reducing the risk of failures. Thus, GPA saw on workflow technology a bridge to reduce the distance between strategy definition and its execution.

Preparation for Process Management Implementation

Historically, the vision over processes is not a preponderant element to the management style of GPA. This is motivated for many reasons, but mainly by a deep respect for the hierarchical structure. Despite that, the awareness about the importance of process management has been growing.

The beginning of the use of workflow technology is a direct result of the increase of this awareness. By choosing workflow technology for implementing certain systems, instead of software development traditional techniques, GPA's IT department made a significant bet on the process concept. Thus, GPA saw on workflow technology the most adequate way to obtain IT support for several of their processes.

KEY INNOVATIONS

Business

The introduction of workflow technology transformed the vision of GPA about the company's processes. The following topics describe the main innovations obtained by the technology under the business focus.

Powerful process configuration tools give power to business process owners

Defining business activities for process automation is always an important matter of reflection. A detailed mapped process may cover every step needed to maintain the process integrity, but any need of change may turn into complex and expensive work. On the other hand, a superficial mapping process might not guarantee the desired integrity. To support GPA on achieving the best benefits of the workflow technology, flexibility and integrity have to walk hand in hand.

This way, IAW solution enlightens this question. The necessary and specific steps of the business process, such as document review or specific operations related to business rules (whose definition is needed to guarantee process integrity) are designed and controlled by the workflow engine. Supporting the business process automation, a key application was built to allow the process owner to define rules for investment approval, where approval roles (such as directors and managers) are organized on different flows. These flows are used by the workflow system to identify the next approver in the chain according to the nature and value of investment. This allows the process administrator to update workflow definitions for approval, giving the organization the possibility to make fast moves into new rules for business processes - in other words, putting process control into process owner's hands.

The following picture shows the application where users can configure the approval steps for a certain kind of investment ("Tipo: Projetos") when requested by a certain business area ("Núcleo EV: Informática"). Process owners can define approval order, approver role (e.g. "Diretor Executivo"), authority limit (e.g. R$100.000) and other parameters.

Fluxos de Aprovação de Empenhos de Verbas

Tipo: Projetos
Núcleo EV: Informática

Aprovação para CC Responsável = CC Solicitante — Incluir Aprovador

Ordem de Aprovação	Papel	Valor de Alçada	Receber aviso aprov?	Operações
1	DIRETOR	50.000,00	Sim	✏ 🗑
2	DIRETOR EXECUTIVO	100.000,00	Sim	✏ 🗑
3	DIRETOR DE INVESTIMENTO E OBRAS	Ilimitada	Sim	✏ 🗑

Aprovação para CC Responsável ≠ CC Solicitante — Incluir Aprovador

Ordem de Aprovação	Papel	CC	Valor de Alçada	Receber aviso aprov?	Operações
1	DIRETOR	Solicitante	50.000,00	Não	✏ 🗑
2	DIRETOR	Responsável	60.000,00	Sim	✏ 🗑
3	DIRETOR EXECUTIVO	Solicitante	70.000,00	Não	✏ 🗑
4	DIRETOR EXECUTIVO	Responsável	100.000,00	Sim	✏ 🗑
5	DIRETOR DE INVESTIMENTO E OBRAS	(não-aplicável)	Ilimitada	Sim	✏ 🗑

Voltar Tipo — Voltar Menu

Figure 1. Process owners can define different flows for the approval chain, according to the kind of investment and to the requesting area.

Higher process agility

Process agility was one of the most important aspects that led to the decision of implementing workflow technology in GPA. It is important to note that retail market dynamics demands GPA to work on constant pressure, where decisions have to be taken fast and deadlines are very strict. Thus, it is possible to say that workflow technology, if correctly applied, may perfectly fit to this culture.

Before the use of workflow technology in the Investment Approval process, documents where exchanged from one approver to another in paper. Apart from the risk of lost or misplaced documents, people who created the document were also responsible for setting and following physically the steps of approval for an investment. A document might be left behind for further evaluation on some approver's desk for days. With the replacement of paper by a digital document and the establishment of a flexible control for approval flow definition, it is the workflow engine that manages the delivery and approval results for the process, coordinating the exchange of the document between the involved people with safety and agility. The paper submission to approvers has been successfully replaced by an e-mail notification for approval, reducing significant time dispended on exchanging paper from one hand to another.

With no need of the physical process, workflow also made it possible for the employee to execute any activity of the investment approval process wherever he/she might be, breaking the barriers of time and place.

This solution also brought to the daily routine of the executives involved on the process the concept of different priority and time expectation for the process activities. Based on this, important or urgent investments may be rapidly approved

and its execution may happen without compromising strategic plans of the company. Critical activities now have deadlines monitored by the workflow system, which takes pro-active measures to avoid process delay, such as sending notifications to the approver and to the responsible for the process. During one year of system usage, it was possible to identify an average reduction of 80 percent on the necessary time for approving investments on GPA.

Improved safety of the approval process

An important innovation brought by IAW was the assurance that each investment request will be directed to the right person, and approved only by him/her. Before workflow, approval safety relied on signature validation, what is (optimistically speaking) a fragile mechanism. IAW validates user permission using a single sign on control, virtually eliminating the risk of fraud.

Another important benefit was improved process confidentiality. Before workflow, strategic investment decisions of millions of dollars were carried through the company in paper documents, with fragile security. Considering the level of competitiveness in the retail market, this is a very risky and vulnerable approach. The IAW solved this issue by introducing the concept of virtual process, replacing paper documents by secure Web applications, guaranteeing that information will be known only by people which are supposed to know it.

Collaboration improves decision making

The fact that the investment requester is involved in the beginning of the process for review and the possibility for approvers to submit their doubts or other questions to any other workflow user increased the collaboration along the process. Every comment is recorded and is available for the next approvers. Many of them contain new information that may have positive or negative influence in the decision making. This improves the quality of the final result of the process. Considering the high value of a typical investment, increased collaboration may lead to significant savings.

Control and continuous improvement

The use of workflow technology allowed the IAW team to follow and control possible bottlenecks of the business process, and using this information, to improve the process. The most important enhancements to the process were: a) the possibility of having approvers submitting questions to any other person involved on the process; b) the optional involvement of staff workers in the process, so they could provide other relevant information to support decision-making.

Process

Workflow technology deeply changed the Investment Approval process. The table below shows the main changes:

Topic	Before	After
Document creation	Using a spreadsheet model	Custom Web application
Approval group definition	Informal definition. Approval group and approver order were known only by the typewriter, who had to print their names in the document	Set of user-configured rules define the order and roles involved in the approval

Media	Paper. The spreadsheet was printed and submitted to approvers	Digital. Information is automatically sent to requester for review and after to approvers
Process control	Manually made by the typewriter, demanding effort to call and remind approvers and to check process status	Electronic, with the possibility of monitor process status anytime
Approval task	The document was delivered to the approver, who could approve immediately or leave with the secretary for further evaluation	Approval tasks are submitted directly to approver's e-mail inbox. System is responsible to send new alert messages if the approver takes too long to fulfill the task
Comments about the document	There was no space for commenting. Some managers used to justify the rejection in the document body.	Every comment is registered and the comment history is presented to the following approvers, allowing effective collaboration improvement
Typical process time	Five to 40 days	Less than five days

With the substitution of the paper document by a Web application, information is all united on a single document, containing data related to the investment and each approver's comments. The electronic document goes to a review, at the beginning of the process, and this information cannot be changed after the final review. This way, the consistence of information is guaranteed. The fact that the all the information is provided by the workflow system also offers to approvers better possibilities for the decision making. Searching the system, the approver may access other details about the document, comments of past approvers and other investments approved or rejected that could affect his/her decision.

The picture below shows the main parts of the process.
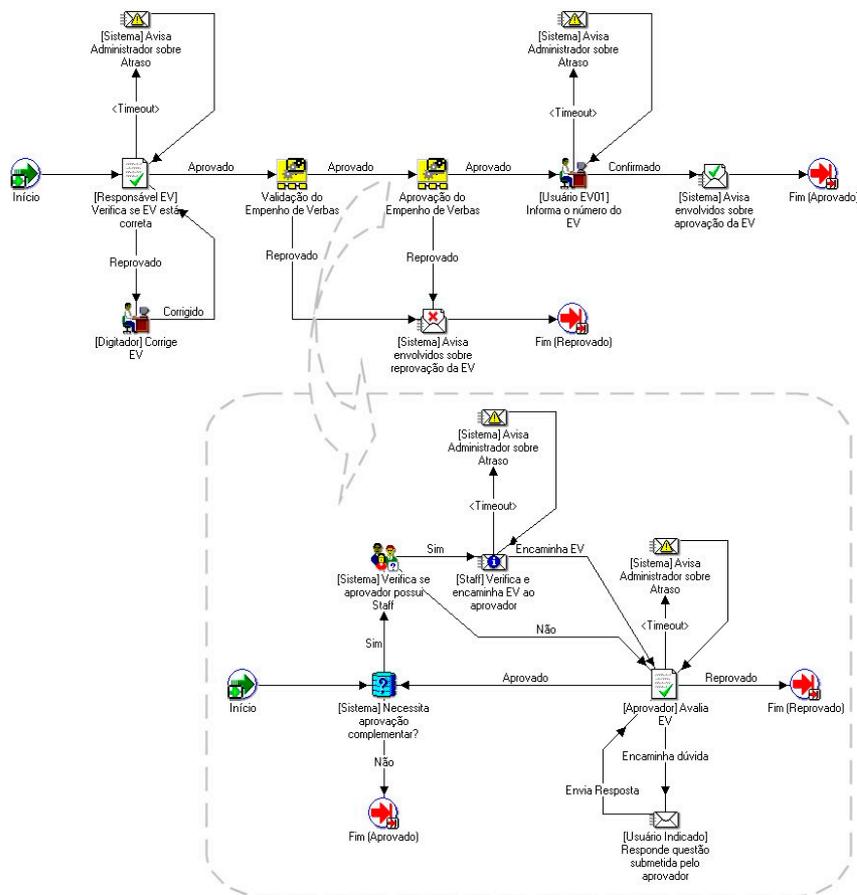
Figure 2. Graphical workflow for Investment Approval Workflow

Technology

Under the technology focus, two aspects stand out: simplified user interaction and the technologic structure built to support the flexibility of the approval flow definition.

One-click Approval

Although IAW is used by a restrict group of users, these people are, mostly, managers and directors of several departments and areas of the company, whose time to interact with the system is limited and whose requirement level regarding interface usability is very high.

Counting on the strong practice of communication through electronic mail, already implied in the daily routine of these users, it was adopted the concept of one-click user interaction. With a simple click on the application, accessible from the e-mail, the user may approve or reject the investment. He/she may also ask a question to another user, having the request and answer registered on a list of comments. In fact, e-mail was pointed by users as one of the most important usability features, demanding less time and effort for training the executives on using this technology.

Figure 3. From his/her e-mail inbox, user receives summarized information about the process and may, in one click, decide to approve (Aprovado) or reject (Reprovado) the investment or to send questions (Enviar Dúvida) to another user (Colaborador indicado).

THE IMPACT ON USERS OF THE SYSTEM AND WHAT THEIR JOBS NOW ENTAIL COMPARED TO BEFOREHAND.

Workflow usage at GPA has had several impacts on users. The most important are:

- greater organization at work, because one can easily check his or her worklist to see pending activities
- transition from paper documents to electronic documents, allowing several data validations, easing cooperation and speeding the process
- process transparency, making full history available and allowing one to know who's delaying the process
- greater awareness about task deadlines due to work item information and to alerts

THE NEW SYSTEM CONFIGURATION

GPA adopted Oracle Workflow as platform for workflow development and deployment.

The system infrastructure combines:
- Workflow Server: IBM Server running AIX, Oracle Database Server 9.1.2, Oracle Workflow Server 2.6.3 and Oracle HTTP Server 1.3.22.
- Workstations: Intel (several speeds), 32 to 512Mb, running MS Windows (98, 2000 or XP), Microsoft Internet Explorer up to version 5.5, Mozilla or Mozilla Firefox browser, Microsoft Outlook, Oracle Workflow Builder (only Process Analyst).
- E-mail server: Microsoft Exchange Server.
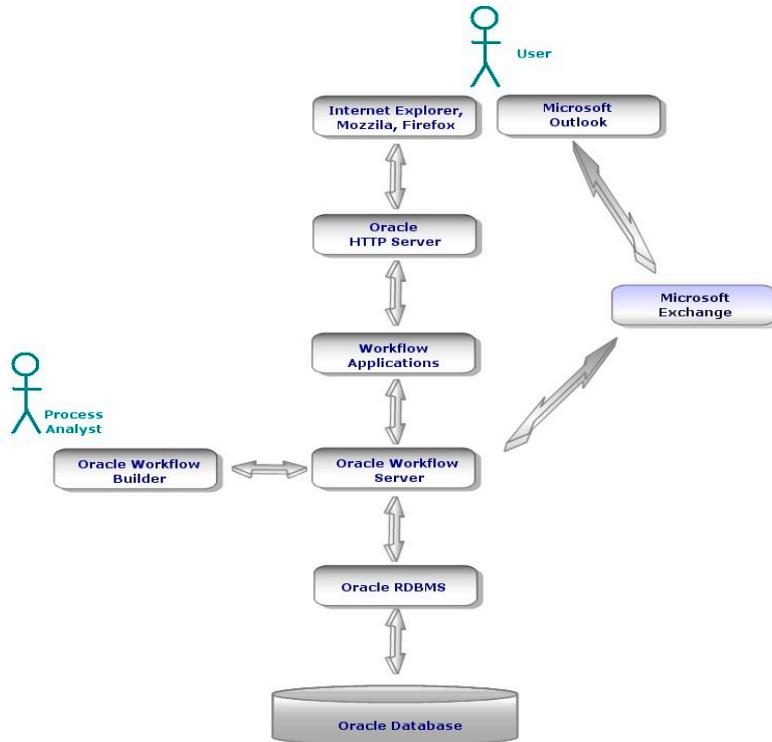
Figure 5. Global System Architecture

THE BIGGEST HURDLES OVERCOME IN MANAGEMENT, BUSINESS AND TECHNOLOGY

Management and Business Hurdles

In a broad sense, management and business hurdles where related to the challenge of supplying the special needs of the system users. Most of them are senior managers and directors, professionals that usually have a very high level of requirement about systems. In fact, their expectation was nothing less than perfection: the system had to be intuitive, easy to use, bug-free and stable. Ironically, due to their daily responsibilities, their involvement in system development (analysis, design, prototyping and tests) was very low. Naturally, it was a huge challenge to meet this expectation with almost no user participation.

These hurdles were overcome by a combination of actions. First, user interface was kept simple and was based on the preferred user's software: e-mail. To avoid the need to log in the system (seen as an unacceptable time loss by users) work-

flow authentication was integrated with GPA's portal authentication. As a result, workflow-user communications works on a very natural way, with zero hour training, and the fulfillment of these expectations was fundamental for the easy and quick acceptance of these users.

Technology Hurdles

The main technology hurdle was certainly related to the requirement of a flexible definition of the approval steps. A previous unsuccessful attempt to use workflow technology to map and control every possible route for the investment approval process created a negative impression about the technology, turning it into an important issue to overcome. In fact, due to this frustrated experience, several managers where skeptic about the viability of using workflow technology. Some of them even held positions such as "Workflow is not for GPA". As aforementioned, the solution was to build a sophisticated (yet easy to manage) mechanism for approval flow definition.

Another important hurdle overcome was the development model introduced to GPA. Due to the geographic distance between GPA (in São Paulo) and iProcess, workflow consultant placed in Porto Alegre (south Brazil), the development of IAW system required a distributed development approach. This work model was new for GPA, a company used to have its consultants working onsite. For this new approach to work properly, some important aspects had to be observed:

- project management based on Project Management Institute (PMI) practices
- more precise definition of project phases and artifacts, reducing risks of scope misinterpretation
- detailed project planning to assure that workflow analyst can complete his/her work in two-three days
- weekly conference calls to ensure that both parties are synchronized
- analyst presence during homologation and initial production phases, and software test team prepared for remote cooperation

These actions have achieved the desired results, and distributed development has had a great success. Currently, all GPA workflow systems are being developed by iProcess, who has been considered a reference for distributed development among GPA's technology consultants.

COST SAVINGS, INCREASED REVENUES, AND PRODUCTIVITY IMPROVEMENTS

The major benefits obtained with the implementation of workflow technology were process agility and the establishment of clear control over processes. Given the strategic nature of these processes, these benefits are essentially intangible, being difficult to measure by the traditional techniques of Return On Investment. Among the main benefits are:

- Agility in decision making reagarding investments. Many investments are often of several millions of dollars. The time-consuming on approving these investments may represent slowness on implementation of the defined strategies or, even worse, slowness on responding to the competition. Thus, the 80 percent reduction in the average time for investment approval, obtained with the workflow system developed, has a wide range strategic impact.
- Safety of approval process. Using the workflow technology has significantly increased the security of the approval activity on eliminating the paper or e-mail signatures due to authorized access to the workflow system. This

fact gets especially relevant when, as it was already said, approval involves expressive value. On such scenario, it is easy to identify the return obtained with the elimination of risks of this nature

- Establishment of Preventive Controls. On a complex company as GPA a single fail over the security access to information systems may result in high financial loss. The discipline obtained through systems like the Resources Workflow eliminates these loss risks on guaranteeing the process integrity as prevention.
- Guarantee of the adoption of new processes. The use of workflow technology was fundamental so the new Workflow for Outsourcing Management could be quickly adopted by every participant. Without workflow technology, there would be a greater effort from the managers to guarantee that every involved part could comprehend the new process and follow the execution rules.

COMPETITIVE ADVANTAGES GAINED AND HOW YOU MOVED COMPETITIVE GOAL POSTS FOR YOUR INDUSTRY

On an environment of highly competition as the Brazilian retail market, companies must look for - and sustain - every possible competitive advantage. And, certainly, the major competitive advantage earned by GPA with the usage of workflow technology was the improvement of the governance policies. Due to the Sarbanes-Oxley act, this improvement became not only an action directed to the refinement of management strategies, but a fundamental element for the business continuity. The non-adjustment for the SOX requirements might bring brutal impacts to the company, as the impediment of having ADRs in the American market, what would have heavy financial effects (Brazilian interest taxes are historically very elevated, usually becoming unfeasible to take expressive resources in the country). Thus, the described workflow implementations collaborated for striking this strategic aim.

IMMEDIATE AND LONG-TERM PLANS TO SUSTAIN COMPETITIVE ADVANTAGE

With the success of the first workflow systems, GPA plans to increase investments on this technology. Besides these three workflow systems described in this paper, the following systems are in the initial steps of development: Marketing Events Approval Workflow, Reimbursement Workflow and Travel Workflow. Beyond these workflows there are other processes being evaluated, motivated by the adjustment for the Sarbanes-Oxley act and the increasing of operational efficiency.

On a broader way, workflow technology is expanding awareness of business process management at GPA. Historically, process management hadn't found, in the retail industry, a fertile field for action. The main reason for this is that return of investment on processes is usually long-term and thus may be seen as incompatible to the extreme dynamics of the retail market. By bringing fast and tangible benefits, workflow technology is breaking this scenario and shows the advantages of business processes management approach.

A new and important sign for the increasing strength of this movement was the recent incorporation of GPA's Process Office to the IT department. From now on, IT and process professionals begin to study and define together mechanisms for integrated work between these disciplines, building an effective path to the implementation of the BPM concept. Certainly, nowadays, few initiatives may bring so much value to a company.