

## COMMUNICATION MANAGEMENT AND ITS IMPACT ON SUCCESSFUL IT PROGRAM

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### ABSTRACT

In this paper we discuss the role of communication management in the success of a large implementation of IT solutions. It is well known that most of project failures in the recent years are not due to technology shortcomings or lack of technical competency of the project team. It is rather caused by “softer” elements of projects including badly planned and executed organization transformation, change management process, and not well enough prepared and executed communication management among various participants of the implementation process. In the paper we present some elements of the communication management model: various dimensions of communication process, its role and objectives, as well as main participants and several modern tools and channels which can be used in the process. We give also several examples of their practical usage in real projects.

### KEYWORDS

Communication management, stakeholders, communication tools, IT system implementation, project lifecycle, communication management process.

## 1. INTRODUCTION

The process of project/program management, as well as various techniques of software engineering is very well defined and described in both academic literature and practical textbooks (Kerzner, 2004; Weil and Ross, 2004; Applegate et al, 2002; Barber, 2004). For many years project management has been very often focused on scope, time and resource management with various additional activities such as risk, change management, ROI (Boehm, 2003) etc. But along with many years of observation of IT projects of various type

and magnitude, we still see a significant amount of inefficiency and ineffectiveness in project management caused by lack of proper understanding of the role which a well defined and then properly executed communication stream can play.

The goal of our paper is to put communication management in the right balance with other activities of the “classical” project management approach (Amason et al, 2007; McConnell, 2006, PMBOK, 2004). Communication management has become more and more important nowadays with all new technologies and implementation techniques which make the development and then deployment of new solutions a very communication intensive process. It is also very closely connected to all activities which are done in parallel to the main “technology” stream like for example: business model change management, knowledge transfer (Maier, 2007), as well as such a “soft” area like the change of the company’s culture.

We treat communication management as a strategic part of project/program management of any large IT initiative, in particular in times of booming solutions like corporate intranets, intensive internal corporate communication management and IT governance solutions, which migrate information and decisions towards “business” stakeholders. Appropriate planning, deployment and then maintenance of this “infosphere” became a critical condition of any successful project.

In the next sections, we present some of the elements of a communication management model prepared for large implementations of IT projects. Based on reviewed and verified data from implemented projects, the proposed model assumes the complete project lifecycle for communication management process. It starts from the assessment phase and ends up with post-implementation feedback review. We also describe examples of key elements of the model with selected predefined templates for:

- Scope and objectives definition.
- Process definition.
- Identification of participants/stakeholders with their roles and responsibilities.
- Definition of potential communication streams and their supporting tools, performance measures with the indication how to use them and monitor them during project execution.

## **2. COMMUNICATION MANAGEMENT IN LARGE IT PROGRAMS**

### **2.1 Dimensions of communication management**

In many cases, large IT implementation programs do not achieve planned benefits on the expected level or even end up with a failure with very significant costs. Some of these cases are very spectacular and are being commented in academic and business publications.

One of the key reasons is that while the business and technical related aspects of the implementation are planned and managed with appropriate attention, the change management dimension is very often underestimated and thus inadequately treated.

Time horizon of large IT implementation programs takes several months or even years, but the path for change management activities is even more challenging and longer. For example, an IT system may be implemented in 6-9 months, the business processes redesigned and implemented in 3 months. But it will take over 12 months for the end users to not only learn

the new processes and new system functionalities but also accept them. If the end users will not accept the new system, the planned business benefits will never be fully realized.

One of the critical components of the change management process is communication management. The role of communication management in a large IT implementation can be considered in the following dimensions:

**Managing stakeholder perceptions from awareness to acceptance.** With a large IT implementation, the change management process begins before the actual change is implemented and ends far after the actual change has occurred. Every IT project or program has different stakeholders – groups of people that have different views, interests and impact on the implementation. All these perceptions impact the readiness for change of stakeholders and should be analyzed and assessed. Communication management activities must ensure that the end users know why they have to change, what benefits the change will bring to them, what the potential barriers and problems with the implementation are. Communication management establishes a shared vision of change that the IT program will bring. It provides all information about what happens to the project/program – now and in the future.

**Development of new skills and competences.** Large IT implementation usually results in a new system in place that will require new skills from the end users. It is critical to provide appropriate training for all types of users. The trainings should be delivered with tools, that are tailored to the needs of different stakeholders. For example, direct end users should be trained in detail about the new ERP system, while sales representatives that do not have direct contact with the solution, should have enough knowledge to explain to their clients in what way this new system will affect their further bilateral cooperation. Apart from traditional classroom trainings, the end users should have a direct and online access to different tools providing the required knowledge that will reinforce and enhance the new set of skills e.g. computer-based-training materials, manuals, presentations etc.

**Knowledge management.** IT implementation is a continuous learning process. As the end users are starting to utilize their new skills in practice, their own experience and recommendations are being developed. Communication management should provide the right platform for sharing knowledge and experience among all stakeholders (Cegielski et al 2006)..

**Crisis management.** Due to their complexity, large IT implementations are high risk initiatives. The nature of programs and uncertainty associated with them, mean that inherent risks are always a threat to success. Program and project managers must be proactive in identifying potential risks and ensuring that appropriate mitigating actions are taken before these risks impact the cost, timescales or quality of project deliverables (PMBOK, 2004; Cegielski et al, 2006). Planning appropriate communication actions in case a risk turns into an issue or crisis is one of the key areas of risk mitigation.

**Communication within the project team.** It is vital for the success of the program/project to provide the team members with communication tools and platforms supporting their activities in the areas of planning, progress monitoring, coordination, risk management, benefits tracking and others (PMBOK, 2004).

**Feedback from stakeholders.** Communication during large IT program implementation is a two-way process during the whole cycle. Information requirements of the stakeholders are researched and analyzed since the inception of the initiative. During the project, stakeholder perceptions and acceptance of change are being monitored and potential improvements and modifications are being implemented. Another extremely important aspect is to “listen” to the stakeholders – their view on the system implementation, perceived problems, comments, recommendations and fears about change. This means that appropriate communication

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channels and tools that enable collecting of such information from the stakeholders should be established.

Dimensions of communication management are summarized on the diagram below.

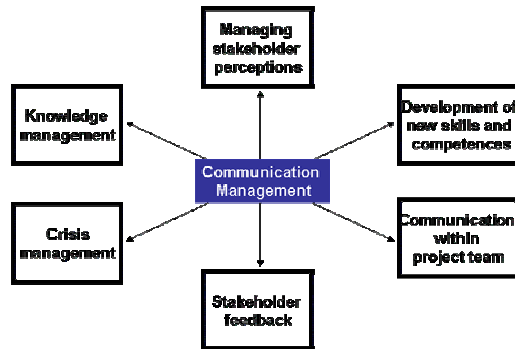


Figure 1. Dimensions of communication management in large IT implementation programs

## 2.2 Objectives

The objectives of communication management are linked with business and IT implementation program objectives (PMBOK, 2004). They should be tailored to specific requirements and milestones of the project phases. Each phase has different requirements and perceptions of the stakeholders. Communication management activities have to be planned in accordance with them. The objectives should be linked with key performance indicators (KPI) that will be measured to assess whether the planned change management activities are fulfilling the requirements.

Decomposition of objectives into project cycle and communication management is presented on the diagram below.

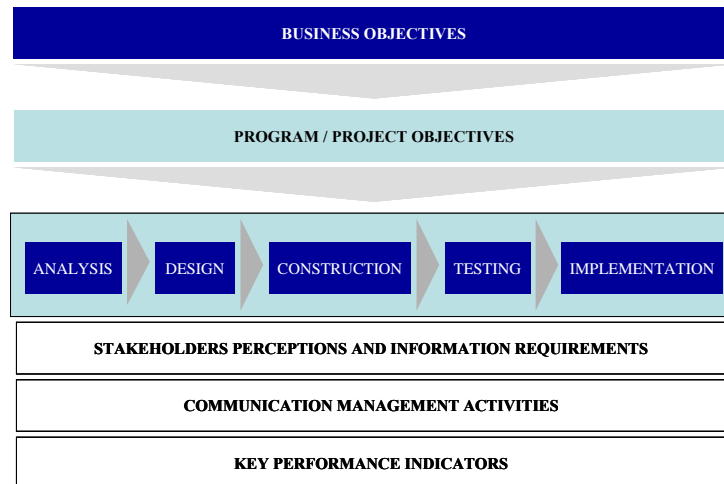


Figure 2. Decomposition of business objectives into project cycle and communication management

Objectives of communication management in a large IT implementation consist of the following elements:

- Establishment of a communication platform with stakeholders regarding the change process.
- Development of effective communication tools required for a successful implementation of the IT solution.
- Support for the program managers in elimination of risks associated with the implementation.
- Building acceptance for the implemented solution among stakeholders.
- Preparation of end users to effectively work with the new solution.

Communication management objectives presented above are the most common to large IT implementation programs and for each program/project they depend on a specific scope, business objectives, environment etc.

### **2.3 Assessment of communication management maturity**

For each IT program/project a specific set of key performance indicators (KPI) should be defined. They have to be related to each communication dimension, for example:

- Understanding of new business solution.
- Knowing and understanding of new processes, roles and responsibilities.
- Acceptance of new technology solutions.
- Level of new competency and skills acquired.

Each KPI has to be measured against a common scale consisting of 5 levels of excellence:

- Awareness.
- Understanding.
- Simple skills.
- Advanced skills.
- Leader of change.

A curve describing maturity levels and its growth over the period (phases) of project development is defined and monitored for each KPI. Target levels of each KPI for every group of stakeholders are defined in the communication strategy. The diagram below summarizes the transformation of communication dimensions into KPIs and then into maturity levels.

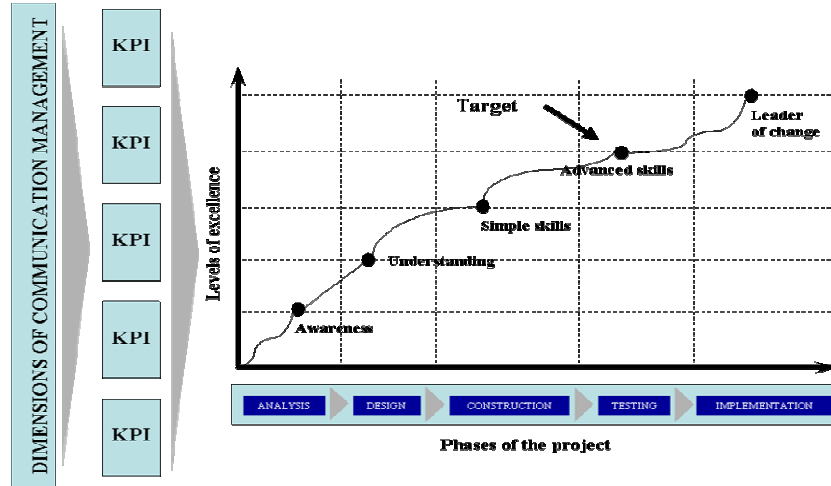


Figure 3. Transformation of communications management dimensions into KPIs and maturity models

The maturity assessment has to be done for each stakeholder group continuously during the project lifecycle. It starts from a pre-assessment exercise, which establishes a baseline for the whole planning process. At the same time the desired profiles for target groups are defined with required paths for each of them. Identified gaps, the required speed of change and the magnitude of the target group will influence the whole communication roadmap and operational plans.

All required data for maturity model are collected during activities related to the mainstream of communication management (i.e. training, workshops,), as well as during dedicated sessions or questionnaire based research. A special knowledge base is maintained to store the data from various projects from the past. Based on similarity and experience of the project team the best collected practices may be used during the planning and implementation process.

### 3. IMPLEMENTATION

Communication management as a part of the project management methodology covers four main components:

- Communication management processes with their measures (and objectives).
- Stakeholders with their identified needs.
- Communication team with its roles and responsibilities.
- A set of communication tools, both management and technology

The communication management process structures the activities that have to be performed to enable internal communication related to the project in the organization. The range of tools that can be used in large IT implementation programs is related to the information requirements of different stakeholder groups. Every group of stakeholders has different information needs that require specific information content, intensity, frequency and channels to be used.

### 3.1 Communication management process

In a generic approach, communication management activities in a large IT implementation program can be structured into a set of interdependent phases:

**Assessment.** Before the actual change starts, all the requirements for communication activities have to be analyzed and assessed. They are strictly related to the scope and depth of the planned implementation as well as to readiness for change in the organization. All stakeholder groups have to be identified and their perceptions and impact on the planned change assessed. This phase is critical for the success of communication management. Poorly analyzed requirements may cause major issues during the implementation of the IT solution.

**Planning.** At this stage a detailed communication plan has to be developed. Content, communication channels, tools and feedback mechanisms have to be designed in accordance with the assessment results. All planned activities have to fulfill the requirements of identified stakeholder groups.

**Development.** After planning is commenced, an infrastructure supporting all the designed tools has to be implemented. Depending on the level of sophistication of the designed tools and communication channels, this may be a demanding task in terms of time, budget and quality. Development and implementation costs of the infrastructure should not exceed the expected benefits. It is extremely important, that all channels and tools are tested before execution – failure may cause mistrust to the overall communication process and become a barrier during implementation.

**Execution.** All activities are executed according to dates or frequencies defined in the communication plan. Before execution, all content must be carefully inspected so only up to date information is sent to the stakeholders.

**Feedback.** All communication activities should be monitored and assessed, as well as appropriate actions undertaken if required. Feedback from the stakeholders may require additional analysis, changes in the communication plan, improvement of the tools and channels used. Additionally, the effectiveness of the communication channels is measured. The results should be analyzed in detail and implemented in such a way that will not disturb the change management process.

The diagram below summarizes the communication management process.

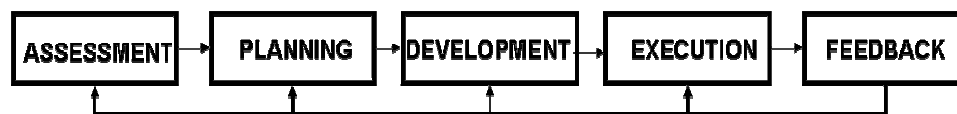


Figure 4. The communication management process in large IT implementation programs

### 3.2 Key stakeholders

The characteristics of the stakeholder groups differ on every project. However, four generic groups of stakeholders can be defined:

**Project team.** This is the group of employees that is directly involved in daily operations of the IT implementation program. This group is relatively small in quantity in comparison to others and requires the most intensive information which consists of project progress, risks,

problems, change requests, technical information required to project implementation, access to documentation.

**Employees cooperating with the project team.** This group consists of all employees of the company that are supporting the project team during implementation: delivering business and technical information, coordinating implementation activities within their departments, giving feedback to the project deliverables. Communication within this group covers information related to project progress and system implementation within the area of cooperation with the project team.

**End users.** This group is critical in terms of IT implementation success. Information requirements of this group are focused around the knowledge of the new solution as well as around the benefits it is offering. Communication to end users must ensure their acceptance of the newly implemented system.

**The rest of employees.** This is the largest group of stakeholders. In the most critical cases, large IT implementation programs affect all employees of the company. Usually, the information requirements of this group are focused around the awareness of the functionality and benefits it brings to the organization.

The key stakeholder groups are summarized on the diagram below.

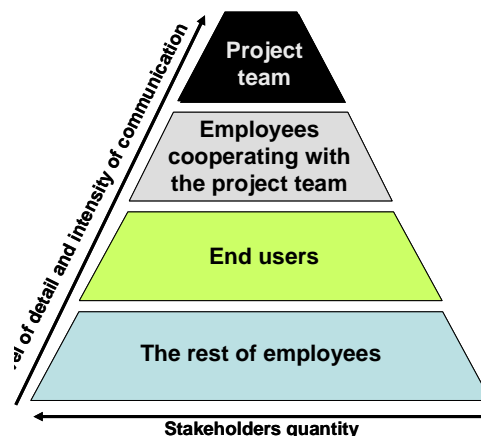


Figure 5. Typical stakeholder groups in a large IT implementation project (Cegielski et al, 2006)

### 3.3 Communication team

In successful projects, the core communication team starts working from the first day of the project. The mixture of experience and knowledge of project management, communication management and technology is required to set up the appropriate team, managed by dedicated communication manager.

Usually, communication management stays in the area of the program/project manager responsibilities. However, in many cases, due to his wide range of responsibilities and heavy workload, communication management falls into the lower priorities on his agenda. Successful communication management requires an additional role on the program/project team – Communication Manager. His responsibilities cover the following areas:



- Identification of stakeholder groups.
- Analysis of the information needs of the stakeholders.
- Development of the communication plan.
- Acceptance of the content that will be delivered to the stakeholders.
- Supervisory of execution of the communication activities.
- Supervisory of maintenance and administration of the communication channels and tools.
- Monitoring, measuring and analyzing feedback from the communication management activities and deciding on improvements and modifications.

Depending on the scale of the IT implementation program, the Communication Manager has to be supported by a team specialized in content management, collaboration tools, moderators, web masters and administrators etc.

The communication team may be set up as an integrated part of a larger change management project structure. In this case project manager must remember about the role of project communication in the context of the whole internal communication in the company, which remains outside the project. Although communication management team starts as a separated unit, during the execution of the main project activities the communication team becomes more virtual and a cross project structure, i.e. communication tasks and activities, are executed by various people from several teams.

### 3.4 Communication toolset

Management and technology toolset supports various activities during the whole project lifecycle, for example:

- Planning and execution phase in the main communication process.
- Monitoring, analysis and reporting.
- Collecting data in the knowledge base for the further use in future projects.

Communication tools used during large IT implementation programs are tailored to the specific project and information requirements of the identified stakeholder groups. The appropriate allocation of communication methods and tools to particular stakeholders and project phases has to be defined in the project plan and implementation plan. The general assessment of effectiveness and coverage of the most popular communication tools is presented in Table 1.

Table 1. The most frequently used communication tools (Cegielski et al, 2006)

<b>Tool</b>	<b>Effectiveness</b>	<b>Coverage</b>
1 to 1 meetings	High	Low
Workshops	High	Medium
Large presentations	Medium	High
Cascade briefings	Medium	High
Newsletters	Low	High
Intranet Portals	High	High
Moderated discussion groups	Medium	High
Articles	Medium	High
Video	Medium	Medium
Formal letters	Medium	High
Frequently Asked Questions (FAQ)	Low	High

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Internal call centre	Low	Medium
Interactive Voice Response messages	Low	Medium
Suggestion box	Low	Low
Email	Medium	High
Notice boards	Low	Medium

The basic technology used includes various desktop publishing sets (for different media including text, voice and video), content/document management, collaboration management software, www/intranet management platforms etc. The team of dedicated content and technology experts is formed to effectively manage content and communication channels of the project.

Effectiveness of the communication process and each particular tool used in the project depends on several factors including the quality of content provided by the tool, frequency of updates, reliability of the tool, scope of project, characteristics of the stakeholder groups. It is very sensitive to the company culture, project management patterns, previous project experience, change readiness etc.

### 3.5 Decision support systems and management dashboard

Communication management involves decision making activities in each of its phases. Therefore a number of customized technology tools is required for storage, management and visualization of data. Additionally, analytical toolset is used for complex evaluations of data (from standard statistical software packages up to data mining technologies) For the visualization and basic browsing activities, a standard business intelligence tools or predefined balance scorecard solutions can be used. They can present target levels and actual figures on the management dashboard. They can be available to all authorized actors of the process.

As a part of communication management solution infrastructure, the firm should also consider creation of knowledge warehouse with 'good practices' collected during projects that were taking place. It will be a source of information of successfully applied communication methods and tools for different kind of IT engagements. They should be compliant with company culture and its readiness for change (planning and execution).

The collected data can be used in the future project management processes to improve project estimation/valuation tasks (Boehm, 2004; McConnell, 2006), in particular during the assessment of an impact of 'soft' elements in various project activities.

## 4. OUTCOMES FROM DIFFERENT PROJECTS

This section covers practical outcomes based on our experience from various IT implementation projects. Although they differed in their size and scope, similarities and common practices can be brought together as practical recommendations for future IT initiatives. The outcomes are structured around the phases of the project lifecycle.

## **4.1 Analysis**

In most cases, this phase of the project involves the first two groups of stakeholders: project team and employees cooperating with the project team. The information requirements of these two groups are focused around the project itself: objectives, scope, expected results, milestones and, what usually is the most important – their role in the project.

### **4.1.1 Project team and cooperating employees**

The key objective for this phase is to provide all the necessary information about the project for the members of the team and cooperating employees. The communication activities should be defined during development of the project plan. At this stage, the most common tools are as follows:

- Formal email letter from the project sponsor. This is the opening of the communication management process. The letter should explain the key objectives of the project, its importance and invite the recipients to a kick-off meeting.
- Kick off meeting. This is the most important activity at this phase of the project. It should be conducted by the project sponsor. Its main objective is to mobilize the project team, build its motivation to the project. Also the roles and expectations should be explained and defined at this meeting. It is very important to present a communication plan and feedback mechanisms to ensure the most effective cooperation among the individuals involved in the project.
- Follow-up meetings, workshops. These meetings should be conducted throughout the whole project. Their main objective is to maintain the buy in of the key team members to the project. Follow-up meetings and workshops should also be used as a feedback channel from the “organization” into the project.

### **4.1.2 End users and the rest of employees**

As this is the first phase of the IT implementation project, it is a critical one for communication management. Usually, the initial analysis of the stakeholders is performed during project planning and detailed analysis is a part of the change management tasks of the assessment phase. Depending on the scope, scale and level of impact on the stakeholders, the project may require communication activities on a larger scale just after its inception. This means, that a more complex assessment of the two largest stakeholder groups (end users and all employees) has to be performed prior to the project start. In this case, the following objectives have to be considered:

- To build trust and confidence to the project among all stakeholders.
- To gain support of the stakeholder groups that will have the strongest relationships with the project.
- To inform about the project, its benefits, results and key milestones.

At this phase, the intensity of information and its depth to the end users and all employees should be on a rather low level. There are two major tools used:

- Articles in the corporate newsletter. They should provide general information about the project and address the potential threats and fears. In most cases, the first article related to the new project is the letter to all employees from the CEO or a board

member followed by an interview with the most senior person responsible for the project (project sponsor).

- Intranet website. At this phase of the project, the website should consist of a rather “static” content. It should include electronic versions of the articles, first FAQ’s. It should also provide an email address to enable potential feedback.

Concluding, if the project requires communication on a larger scale already at the analysis phase, planning and development of communication tools has to be performed during development of the project plan. Tools for next phases of the project should be developed during the analysis phase.

## **4.2 Design and construction**

Communication management in the next two phases of the project is focused around the information needs of the employees directly involved in the project.

### **4.2.1 Project team and cooperating employees**

The key objective at this stage is to maintain the exchange of information about the project among the project team and employees cooperating with it in the areas of progress reporting, risk management and development of deliverables.

Status meetings are the key activities performed. As most of project deliverables are being developed at these two phases, tools maintaining knowledge management should be in place. Usually, it is a dedicated intranet site through which the team members can upload their deliverables to a dedicated knowledge base. To ensure collection of relevant and valuable information, a knowledge management policy and procedures should be in place. Additionally, on large scale assignments, a dedicated “knowledge officer” should be appointed.

### **4.2.2 End users and the rest of employees**

Depending on the output from the analysis phase, communication activities during design and construction for the two largest groups of stakeholders can be performed in two ways. If communication to these groups was initiated in the previous phase, during design and construction it is limited to general information about the project as a continuation, using the same channels and tools. If not, then the scope and tools presented in the analysis phase is being used at either the design or construction phase.

## **4.3 Testing**

The key risk that has to be addressed during this phase in communication management is the impact of the testing results on the stakeholders.

#### 4.3.1. Project team and cooperating employees

During testing the project team requires a quick and comprehensive information about the results of the tests. To fulfill this requirement there are two types of communication tools used:

- Test progress meetings, during which all the results are being discussed and appropriate corrective actions undertaken.
- Intranet site on which the status of the tests can be monitored on a continuous basis. Team members responsible for maintaining errors are allocated on-line and the status of corrective actions is being tracked.

#### 4.3.2. End users and the rest of employees

The results of testing may have a large impact on the end users and other employees. If the results of testing are not satisfactory, a risk of rumors about a “faulty” system may appear. This may have a devastating impact on the attitude of the end users to the system they will be using. To manage this risk, information about the progress of testing has to be sent to the stakeholders – usually through the project Intranet site. In case of poor results of testing, they have to be presented in a “positive” way (e.g. linking errors with corrective actions). Moreover, a feedback channel has to be established to enable the end users to ask questions or report doubts. This is performed either by a dedicated email address or a dedicated track on the project discussion forum. The second tool has a stronger impact on a larger group of end users, yet has to be managed with strong attention.

### 4.4 Implementation

From communication management perspective, implementation is the most challenging phase – especially for the end users and employees of the company.

#### 4.4.1. Project team and cooperating employees

Similarly to the previous phase, information management for the project team should be focused on operational issues related to implementation. Status meetings, monitoring of milestones and tasks through the Intranet are the key communication vehicles used.

#### 4.4.2. End users and the rest of employees

The key objectives for communication management in the implementation phase are as follows:

- To prepare the end users to operate the new solution.
- To gain buy in for the new solution and changes related to the implementation.
- To provide effective feedback on the perceptions of the new solution and related changes.

The tools used can be grouped in two main categories:

- **Change management.** There are several tools that are used to manage the fear of change and ensure the buy in of end users and employees. Firstly, a formal letter from the CEO or a board member informing about the start of the implementation is sent. This is followed by cascade briefings during which the key details of the upcoming implementation are

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presented. If the implementation has a large scope and is a long process, the follow-up meetings should be held. During the implementation the end users and employees should receive newsletters covering all the up to date information. In addition all information should be available on a constant basis through the dedicated Intranet website.

- **Training and knowledge management.** The tools should be aligned with the learning process for end users. At the beginning, the end users should pass an online self study training, which is then followed by a classroom training, where they can gain first experience with the system. After completion of the training, the project Intranet website should have a dedicated space that will enable access to all training materials and will stimulate to a discussion and knowledge exchange through FAQ's and discussion groups.

### 4.5 Summary

The usage of communication tools throughout the project lifecycle changes accordingly to the importance of the information needs of the stakeholder groups. The first two phases involve the project team and cooperating employees mostly. These two groups need tools that will support their daily project work and knowledge management.

Testing and implementation are the phases in which the importance of the end users and all employees grows rapidly. Communication tools have to support management of their perceptions and development of new skills and competences.

The table below summarizes the importance of communication dimensions and tools used during the IT implementation project.

Table 2. Usage of communication tools throughout the project lifecycle

	Analysis	Design and construction	Testing	Implementation
Key stakeholders	Project team Cooperating employees		Project team Cooperating employees End users The rest of employees	
Dimension of communication	Communication within project team	Communication within project team Knowledge management	Communication within project team Knowledge management Crisis management	Managing stakeholders perceptions Communication within project team Development of new skills and competences Knowledge management Crisis management
Tools	Meetings Workshops Newsletters Formal letters Intranet portals		Meetings Newsletters FAQ's Moderated discussion groups	Cascade meetings Presentations Formal letters Newsletters FAQ's Moderated discussion groups

## 5. CONCLUSIONS

The scope of communication management in large IT implementation programs covers areas from communication within the project team through managing stakeholder perceptions and knowledge management to monitoring and assessment of stakeholder feedback. The objectives of communication management are linked with business and program/project objectives and are focused around building acceptance for the implemented solution among stakeholders, empowerment of end users to effectively work with the newly implemented solution and development of an effective communication platform for a successful IT implementation.

The communication management process starts with stakeholder analysis which is critical for the success of all communication activities and is followed by planning, infrastructure development, execution of communication activities and ends with feedback.

The success of IT implementation depends strongly on the involvement of both the executive and senior management of the company in communication activities which usually are at the responsibility and supervision of the program/project manager. However, to ensure the success, communication management has to be at the responsibility of a dedicated person who has the appropriate authorization and position in the program/project as well as in the organization.

With the development of electronic media platforms, the set of communication tools and channels is very wide. A portfolio of tools and channels has to be tailored to the specific needs of stakeholders, and the scope of the implementation as well as to the depth of the change process conducted in the program/project.

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