

# ***Effective Administration and Management with ProBis***

*White Paper by Dr Ilia Bider of IbisSoft ([www.ibissoft.se](http://www.ibissoft.se))*

**Abstract.** Management tradition distinguishes a number of separate subsystems in the field of administration and management, such as reporting/logging, planning, document management, knowledge management, communication, decision making. Computerization of the modern office lead to more effective subsystems still leaving them separated from each other. The next step on the path of achieving more effective administration and management is getting it functioning as an indivisible whole. What are the ways for achieving this objective? Is integration of subsystems the right way to go? Are there other options?

## **Introduction**

The goal of this white paper is to discuss what is needed to introduce an effective administration/management in a non-manufacturing sector of a private company (sales, marketing, product design, etc.), or in an organization, such as local or central government, or interest organization (e.g., trade union). First, we list a number of basic subsystems traditionally distinguished in administration/management. Next, we discuss the interconnections between these subsystems. Lastly, we discuss a way of introduction of all subsystems in the operational practice in “harmony with each other”. Note, that under subsystem, we do not mean any technical system, but rather a set of rules/procedures that the staff follows when completing a certain kind of internal activities. These rules/procedures can be supported by some technical, e.g., computer, system, but they can also be purely manual.

## **Basic subsystems**

Management tradition distinguishes a number of fields of administrative activities that are present in more or less extent in any company or organization. These fields are listed below in an arbitrary order; the order does not represent any priorities, all fields are equally important for normal functioning of an organization. Each field has its own set of rules established by the management or/and emerged historically from practice. The term subsystem (though a bit technical by sound) is quite often used for referring to the fields on the list, and we follow this tradition.

1. *Logging/Reporting* subsystem - internal activities aimed at registering data on tasks completed, or events that took place. These activities are of use in many circumstances. For example, reporting one completed task (e.g., delivery) can serve as a signal for performing (planning) another task (e.g., invoicing). Having a log of all events can also help to solve the conflicts internal (between the members of staff), as well as external (between the organization and its customers). For an external conflict, proper log can make the difference between winning and loosing a case in the court. In some domains, a minimum number of logging is prescribed by the country’s law, which is the case, for example, for the Swedish public sector.
2. *Planning* subsystem - internal activities aimed at defining tasks to be completed and assigning resources to them. The tasks are normally planned in the frame of some business process, e.g., a project, a case, a sale, etc. Human resources are

assigned according to the availability, and professional qualifications that are required. The planning activities insure: (a) that each process (e.g., project/case/sale) will continue (and does not hang); (b) resources are evenly distributed between tasks according to their priorities.

3. *Document processing* subsystem - internal activities aimed at storing, finding and getting access to various documents produced by the organization itself or received from somewhere else. For non-manufacturing sector, documents (such as proposals, agreements, decisions) are the only physical representation of the work being done in this sector. Having order in documents under production and already produced is an important concern for this kind of business activity.
4. *Knowledge management* subsystem - activities aimed at gathering, storing and giving access to information on current states of affairs, past experience and currently established operational procedures and policies. Usually, knowledge of this kind is distributed through the whole organization. A great part of it sits in the heads of people who:
  - (a) are working in a particular department (knowledge on rules, procedures and policies);
  - (b) are engaged in a particular project/case/sale (current state of affairs), or
  - (c) have experience of past projects/cases/sales.

If the knowledge resides only in the heads of people, the organization is extremely vulnerable to temporal absence of the staff members. Nobody can answer a question about the state of affairs in a particular project/case/sale. Nobody can help to determine what to do next, or give an example of how we managed to succeed in the past. In addition, adding new members to the staff in exchange of those who are quitting becomes quite a tricky task. The goal of *Knowledge Management* is to ensure that the knowledge belongs to the organization as a whole, not just to the individuals who work for it.

5. *Communication* subsystem - activities aimed at ensuring access to information (registered events, plans, documents, operational procedures, state of affairs, past experience) for each member of staff who is in need of it. Without efficient communication, the four subsystems listed above will be of little use as soon as the organization has more than one member of staff.
6. *Decision-making* subsystem - activities aimed at improving operational procedures and policies or adjusting them to changes in the strategic goals, or the environment in which the organization operates. The decision making is done based on the information on:
  - (a) how the organization functions internally, and
  - (b) how the external environment looks like.

The easiest way to get information on (a) is by analyzing the data handled by the first four subsystems.

### **Interconnections between subsystems**

Though, traditionally, the fields of administrative activities listed in the previous section are distinguished as separate subsystems, in reality, they are not that much separated from each other. Consider an operation of reporting (logging) a completed task, e.g. reaching an agreement with the potential customer on product demonstration. Simultaneously with reporting, the following activities might be required:

- Updating the state of affairs in the current sale, e.g. “customer has an understanding that our products might satisfy their needs”. This activity belongs to the *Knowledge Management*; it can also help in *Decision Making* as the updating information on the state of each sale makes it possible to get answers on the questions, such as “How many understandings have we reached by now?”, or “How many understandings did we have last month?”.
- Planning a new task, e.g., “demonstration”, and, probably, assigning a resource to it (e.g., a sales engineer). This activity belongs to the *Planning*.
- Communicating the information to other members of staff who might need it, e.g., the sales engineer who should run the demonstration, or the head of engineering department who should assign an engineer for the demonstration task. This activity belongs to the *Communication*.

Thus, each working moment may touch several (or sometimes) all of the subsystems.

Actually, distinguishing between the individual subsystems constitutes a heritage from the pre-computers era in which manual means more or less required separation between the subsystems in order to make them effective. When computers became part of the every-day’s life, the subsystems remained separated due to inertia. Instead of manually driven subsystems, we have got computer supported subsystems based on software products, such as reporting systems, project planning systems, document management systems, content management systems, email as means for internal communication, etc.

When software products made each of the subsystems quite efficient, the interconnection between them became more apparent. For example, now, we can introduce in operational practice a sophisticated document management system with the help of which we can find any document by its title, author, and even content (“Semantic Web”). However, for the administration and management, the most important questions are of the kind “What document has been sent in a particular project/case/sale at a given state of affairs of this project/case/sale?”, and “How did this document look like at this moment?”. The latter question has importance because the document could have changed since it was sent. Answers for such questions are difficult to find based on a document management system only.

The obvious solution for the problems that arise due to the interconnection between the computer-supported subsystems is integration. However from practice, integration of computer systems that are based on different conceptual ideas (not taking into account the difference in technical platforms) may raise more problems than it solves. For example, if one subsystem supports automatic storage of historic information, and the other does not, what are we suppose to do? Is integration really the answer to the problems of effective management and administration?

### ***ProBis* solution**

We believe that the traditional division of administrative and management activities into a number of subsystems is a bit artificial, except, maybe, for the *Decision Making* subsystem. Actually, there is only one system, the subsystems are just special views, or projections of this system on some axes or surfaces. It is well known that restoring a multidimensional whole based on projections requires a great deal of imagination. People who work with the subsystems do have such kind of imagination. Do we want

the computer to have it too (this is what proper integration is really about)? Isn't it easier to put inside the computer an administrative and management system as one indivisible whole from the beginning?

To prove that there is a positive answer on the last question, we designed a product called *ProBis* that supports the administrative and management activities without dividing them into subsystems. The heart of the product consists of

- Historical database that automatically stores information on all events and all past states of all projects, cases, sales, documents, and other business objects.
- Principle of dynamic and distributed planning.

The product, among other things provides with:

- *Virtual calendar* that allows the users to plan tasks to each other, and gives *immediate access* to all information required for completing individual tasks. The latter includes information on the *currents situation* and all *relevant events* and *documents* in the past and future.
- *Automatic support of history* that allows not only to see *what* happened in the past, but also *how* things looked like at that time.
- *Document management* that facilitates getting access to any internal or external document without knowing its name or storage placement. The documents are found through association to their usage (e.g., purpose of creation). In addition, *via support of history*, all internal documents are automatically versioned.

Unlike other administration/management support systems, each item on the list above does not constitute any separate subsystem, it just represents a special view on the *ProBis* functionality.

The introduction of *ProBis* does not require any significant investment, and it can be used almost at once after installation.

Technically, *ProBis* is a modern computer system that fully exploits MS Window graphical interface, and features provided by modern Database Management Systems (currently, *ProBis* supports Oracle, and MS SQLserver). However, it is not technical excellence that differentiates *ProBis* from other software products supporting administration/management. What is unique with *ProBis* is an original holistic view that allows to complete all actions required by a given working moment (see example in the previous section) in one go and without switching between various subsystems.

Behind *ProBis*, there lie 20 years of research and practice in the field of Business Process Analysis, Modeling and Control conducted by IbisSoft together with its partners and customers. The results of our research and practice are available to everybody, they were both published in professional periodicals, and presented at international conferences and workshops.

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For more information on *ProBis* and our other products and services, please contact IbisSoft at [info@ibissoft.se](mailto:info@ibissoft.se).

**Short information about the company:** IbisSoft ([www.ibissoft.se](http://www.ibissoft.se)) is a consulting company based in Stockholm, Sweden. It specializes in the borderland between Management and IT, the main focus being on organization of operative work in non-manufacturing business processes.

**Short bio of the author:** Dr. Ilia Bider ([ilia@ibissoft.se](mailto:ilia@ibissoft.se)) is a cofounder and Director



R&D of IbisSoft. He has MS in Electronic Engineering and PhD in Computer and System Sciences, and combined experience of 30 years of research (in the fields of business modeling, computational linguistics, databases), and practical work (business analysis, and software design, coding, sales, and marketing) in five countries (Norway, Russia, Sweden, United Kingdom, and United States). Dr. Bider has published over 25 research papers as well as a number of articles for practitioners. His main specialty is finding research topics in his business practice, and testing research results in the

business practice. Dr. Bider is an inventor of the state-oriented approach to business process modeling that is based on the application of the conceptual ideas of the Mathematical system theory to the realm of business processes. This approach has been successfully tested in business analysis and application development practice of IbisSoft and its partners. Dr. Bider puts a lot of effort in bridging the gap between the academics and practitioners. He co-founded a series of international workshops on business process modeling where both academics and practitioners meet for fruitful discussions. He holds tutorials at international conferences to highlight the needs of practitioners for academic public. He sits on the editorial board of the Business Process Management Journal as a representative for practitioners.