

Systematic Selection of IT-Solutions for Planning

– Part 2 –

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The fact that the process of software selection for planning is so complex cannot be underestimated. That is why we need to apply a systematic method that includes company specific factors. In the previous article (Controller Magazine Mai / June 2011, pages 28-34) we dealt with the fundamental requirements for such a selection and presented available categories of tools. **In this article** we want to analyze the factors involved in more detail which will help us to **focus on the requirements important for individual companies**.

Influence of Environmental Factors on the Selection

Focusing on company specific factors enables us to prioritize or select criteria. We analyzed the importance of various environmental factors according to the requirements:

- Clear **relationships between an environmental factor and appropriate**

software are noticeable. So it is, for example, obvious that the environmental dynamics influences the necessary flexibility of a solution: if nothing has changed the planning solution has to be also only very seldom adjusted. In such a case the otherwise important factor of adaptation flexibility can be neglected.

- Moreover, there are also **numerous relations between the environmental factors** which have to be considered, as the following example illustrates. It becomes immediately obvious that the branch has an influence on the environmental dynamics. The number of functional areas drives also complexity because the coordination intensity increases. The degree of sophistication "drives" also the type of planning and controlling systems.

Altogether we become a really complex environmental interrelation as illustrated in [image 1](#). The interrelation diagram shows the fundamental interrelations.

We examined in detail the effects of environmental factors according to the requirements catalog. The following part will present however only the fundamental effect relationships.

1. Philosophy of Leadership

The philosophy of leadership reflects the decision-making behavior in a company. Are decisions made centrally? Which authorities have the staff in the departments and which in the branches? How intensive is the deviation control? Which fundamental tasks belong to the deviation analyses: sanctioning, controlling or plan adjusting?

The greater **freedom** a manager has in an area or department while deciding the contents of planning and controlling, the more important it is to have a tool for bringing together the individual planning results. If decentralized units have also high degree of freedom in the area of planning, **the tools are also supposed to depict**

planning objects, methods and masks.

With a purely central controlling the tools for process supporting can possibly become useless. Within a centrally led company, the adaptation measures that are centrally conducted, such as overall cuts, are rather more probable. This creates a greater **need for an automatic distribution function**.

Finally with high degrees of freedom in subdivisions and at the same time higher dependency, the necessity to be able to adjust delivery and performance relationship rises as a part of planning.

2. Maturity Degree

An additional factor is the maturity degree of controlling. The better the arrangement of applied solutions, the more experience with controlling tools there is and the stronger the company-specific special solutions, **the weaker is the ability to apply standard models** in the form they are offered by some suppliers. There is accordingly the need for a **higher degree of freedom in adapting our own ideas**.

While the pre-configuration of controlling-experienced companies is possibly too rigid and general, their meaning becomes more significant with a limited maturity degree - in order to omit "reinventing the wheel" and to be able to apply prompt and pragmatically tested solutions. The trend in less controlling-experienced companies is a need for a limited number of details so as not to overtax the organization.

With a high maturity degree the requirements for integration also rise: the **integration between strategic and operative planning** as well as between part-planning systems has to be supported by an IT-system.

The drivers-orientation gains with increasing degree of maturity in importance, because complex methods (e.g. simulations, scenarios) come into operation. And not least the innovative methods such as a rolling forecast are more often used. A higher degree of predefinition is partly disadvantageous here.

3. Complexity

Complexity is a factor that can be defined by the number and degree of objects

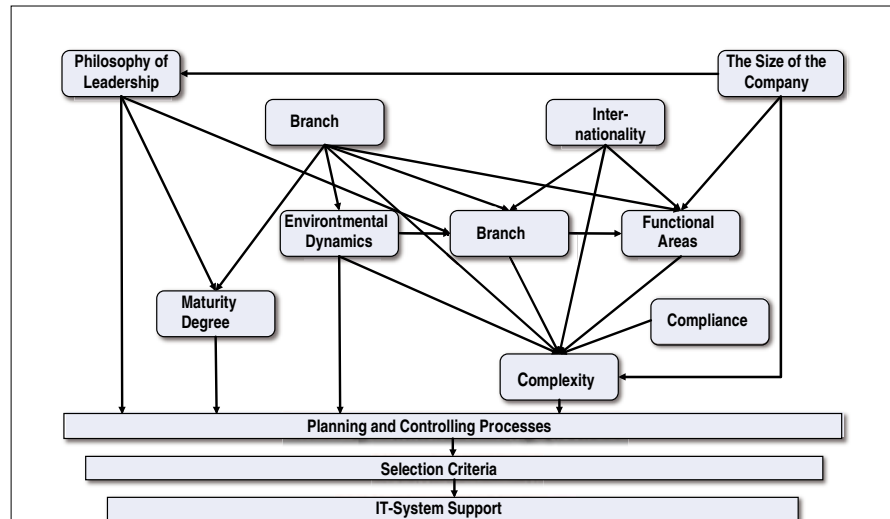


Image 1: Environmental Factors in Interrelation

interdependency. Important factors are here, for example, the **number of planned products**, the **scope of manufacturing structure** as well as **involvement degree of organization units**. An important complexity factor is the relation between company objects. In case of a higher complexity it becomes necessary to make a division into sub-plans, which however intensifies the decentralized coordination. Good planning requires therefore an agreement among the planners. In this respect a **decentralized agreement of provider-recipient relationship** is of great significance.

The higher the complexity, the harder is the evaluation of planning decisions as a decision influences a number of other company aspects. According to that it is sensible to also illustrate the interdependency through drivers in order to be able to assess the influences of actions. Only in such a way can scenarios be illustrated and the effects of various occurrences assessed.

With high complexity we can come across numerous combinations in relations. These can be only partly standardized for the whole company as in case of an integrated success and financing planning. To be able to illustrate such a diversity, a **high flexibility of configuration is needed**.

A complex structure of a **group of companies requires** after all specific **methods of planning** (e.g. **quotal consolidation, inter-company matching and elimination functionality**). As these functions very often do not belong to standard repertoire of planning solution, there is again an installation flexibility needed.

4. Environmental Dynamics

In a dynamic environment situations continuously occur that lead to an adjustment and alteration in organizations and systems. Globalization, technological progress and increasingly faster availability of information reduce entry barriers. Constantly shortened product and innovations cycles are discernible in many branches. More competitive situations lead to opening up new markets and customer groups.

The shorter the market cycles or the higher the competitive intensity, the better should the planning systems be able to flexibly cover requirements for processes. **In a dynamic environment changes are the order of the day**. In order to react appropriately the planning has to be often revised. **Dynamic "rolling"** depicts future-oriented information. **Shorter planning cycles** should be optimally supported by making it simple to create plan versions.

Strong market dynamics brings with itself frequent structure changes. The **subsequent adjusting of data** greatly gains in significance. Data structures for newly opened markets, new products or customer groups can be flexibly added. Despite all dynamics there has to be a comfortable way of **conducting comparison with historic values**.

Due to external requirements that are increasing and changing additional reports are necessary. The reports become more frequent. Adjusting existing reports as well as generating new ones should be possible

by means of flexible mask designs without programming effort. The need for an ad-hoc analysis for preparing decisions increases significantly. **Analyses and simulations that can be made intuitively** and concentrate on fewer controlling-relevant KPIs complete the picture.

The use of integrated IT-systems with open architecture should be the best way to do justice to these requirements. Centrally stored data and the possibility to be able to freely configure analyses and reports without IT-support staff's help are of great relevance.

5. Compliance

Also in the field of planning the influence of regulations cannot be underestimated. Even if companies are free as far as arrangement of planning is concerned. Yet the results of planning are applied in manifold ways. That is why already the **situation report** has to be based on reliable and comprehensible information. It is the same with **risk analysis**. An eventual damage can be assessed in many cases only through reasonable planning. While assessing the **impact of a product loss**, for example, calculations are as a rule necessary in the way they are used in planning calculations. Here you can rely on the existing planning systems, but the later **comprehensiveness of calculation methods** is also to be established.

Workflow faces special requirements. Master and transaction data changes are to be documented. There should be mechanisms blocking adverse changes. Master data changes should be available and there should be a possibility to reconstruct the old versions.

Furthermore, high requirements are set for integrity of calculations. Support should be provided here for modeling planning interdependencies (e.g. production output department from marketing planning) so that manual adjustments can be wholly abandoned.

A possible validation is here also of great importance. All possible inconsistencies should be excluded by function bridges (e.g. closing inventory in assets overview = amount in the balance sheet). The possibility of continuous sanity checks (e.g. costs increase not > 5%) should however not be underestimated.

6. Branch

Each branch has its own characteristics, also when we take planning into consideration. **Trade industry** is, for example, often rather centrally planned. **Manufacturing companies** use a higher level of detail (products or at least product groups in marketing planning). In **service companies** planning of staff costs is often more important than material costs planning. Organizations of **public administration** require top-down methods with high degree of detail and a comprehensive authorization procedure.

Further operations concentrate on the integration of sub planning. Manufacturing companies have higher requirements to integrate sub-plans (production, procurement, etc.) **Companies basing on projects** (plant manufacturers, consultations etc.) have to be able to depict (multi-)projects.

Finally, input comfort has to be mentioned as well. **Branch-structured companies** set often high requirements for aspects such as comfort, pre-covering and pre-defining reports, as there are few business management-experienced personnel available in the branches (if nec. branch managers, hardly controllers).

7. Organization

Organization of a company is not only an important environmental factor for a planning system, but it is also defined by a multitude of environmental factors that have been named here, such as the **size of the company, branch or internationality**.

The influence of the type of company on planning can be viewed in two ways. On the one hand considering it as a structural and procedural organization and on the other hand as inter and intra company activities. Matrix structures are in relation to planning processes considerably more complex than divisional or functional forms of organization. As it is, for example, not enough to illustrate the hierarchic work flow. **The same objects are planned from partly different perspectives**. That is why more pre-planning has to be consistent with one another. A company controller is supposed, for example, to include marketing planning of

product groups as well as planning of customer segments while making a plan for his/her region in the company. As they could be made, for example, each time by different account managers in alternative regional structures. The more independent organizational units there are, the more expensive is the **processing of inter-company value flows** during planning. For example, through including numerous individual internal prices.

The more often an organization (at least partly) wants to constantly rediscover and adjust itself, the more important becomes an **efficient ability to illustrate reconstruction or reorganization** in all versions of the plan. Supporting reconciliation or similar structural aids such as data comparison can make planning tasks for planners in this case significantly easier.

8. Functional Areas

The sort and number of scheduled functional areas (e.g. sales, production, research & development) have a significant influence on planning systems. The integration and coordination of sub-planning is in this context of great importance.

- That concerns on the one hand the **necessary consistence of sub-planning along value chain**. In the sense of a driver-based planning there has to be for example a possibility to make marketing, purchase and production planning consistent using a system.
- On the other hand at that point the **consistency between strategic and operative planning** is to be addressed. They are crucial to functional areas such as research & development in guaranteeing the realization of strategic guidelines. In this context, it is also important to address the integration of project planning in the planning systems which can considerably relieve budgeting processes in the functional areas such as R&D or IT.

Apart from requirements for the integration of sub-planning the function-oriented planning sets particular requirements for **configuration flexibility** of the planning systems. There has to be a possibility to illustrate complex,

multifunction data models. In addition, planning systems are supposed to use simultaneously various planning methods such as top-down planning or bottom-up-planning in various functional areas. Also various planning periods for various functional areas or rolling planning (with different granularity and maturity) for some functional areas taken into consideration. In relation to data structures functional areas partly have also quite a different requirement that has to support a planning system. **Divergent levels of detail along the hierarchies of planning dimensions** or, for example, the single item planning widespread in investment planning can be mentioned here.

Last, but not least from the point of view of functional area there has to be a simple handling of planning systems provided. Particularly in some functional areas such as sales department many staff members take part in a decentralized planning.

9. Internationality

The international environment requires **multilingual software solutions** that are **available** daily and **round-the-clock**. The approval of a system depends on the comfort functions for the users. Help texts, intelligent default settings and background calculations are supposed to support planners and also ensure the consistency of data. At the same time the collected data is validated and consolidated with a high degree of automation. **Currency effects and inter-company relations** can be customized individually.

It is important to **depict in an integrated way** the distinctive features of **international accounting standards** (IFRS, US GAAP) **as well as local standards**. At the same time local ERP-systems and their local charts of account are to be linked through standardized interfaces. The central administration of planning requires master and transition data management that documents all phases of the process with the help of planning versions. Highly relevant is also **protection of data regarding unauthorized access, confidentiality and espionage**.

Integrated and standardized IT-basis-structures are a requirement for a successful international roll-out. Practice, however, has shown that the IT-standardization of changes

cannot take place simultaneously. That is why it is often necessary to achieve through central data bank function the same data basis and in consequence a high integration on the level of the whole corporate group.

10. Size of the Company

An additional influence factor for the meaning of planning functionalities is the size of the company. The connections are immediately apparent when within a principle of **flexibility according to scalability** the question about potential planning solution is asked. The bigger a company is, the more important become the issues considering the **maximal number of planners**, the **maximal number of simultaneous accesses** as well as the **maximal size of the data model and data volume**. Also questions considering the concept of authorization become more significant for larger companies, for example the direct transfer of authorizations from ERP-systems.

The bigger the company is and therefore (as a rule) the more planning participants there are, the stronger is the call for user-friendly and intelligent support during planning processes. Helpful are here, among other things, enhanced functions of sanity checks, a higher relevance and availability of premises, transparency of interdependence and modifications in data models for planning.

The size of the company as an environmental factor has an indirect influence on most other selection factors, mostly through the environmental factors of complexity and organization. According to the principle of simplicity especially the process requirements are strongly determined by the size of the company. That concerns, for example, the **work flow support** that gains in importance for middle-sized companies. For bigger companies the work flow support is essential due to increasing number of planners.

Though the indirect influences are also important. If the units are further divided geographically, a web support will be advantageous. Consequently the selection factor of input request becomes ever more important for the planners. According to the principle of integration the ability to coordinate sub-planning with increasing size of the company becomes ever more essential. It is

again influenced indirectly through environmental factors of complexity and organization, whereas easy technical integration of IT-systems is also to be considered. Due to growing number of planners and their higher specialization as well as often predominant heterogeneous IT-landscape these are important selection factors.

Impacts of the Planning and Controlling Systems

All above mentioned environmental factors have an impact on designing of planning and controlling systems. This is first of all regardless of the implementation on the system side, but sets the frames for it.

While deciding about the form of the planning and controlling systems the first priority is, of course, the aim and purpose of the planning. It is often reduced to providing a plan/actual comparison. One often forgets that planning itself is a basis for personal and investment decisions. That it is supposed to provide foundations for management decisions and that planning can have a considerable influence on the results.

The planning and controlling system is often characterized by the following factors:

- Is a decentralized or centralized planning sensible?
- Which planning methods should be applied?
- Which sorts of planning are suitable?
- What is the necessary and sensible level of detail?

Decentralized or Centralized Planning

As already illustrated, the company's structure and size have a fundamental influence on the sort of planning and consequently on the selection of suitable tools. The more branches and units there are in a company, the higher are the requirements for **data aggregation**, **arrangement of plan targets** and for the **simultaneous diversification of planning** on its different levels. The demands for the planning system result in direct requirements for systematic implementation.

With decentralized planning the requirements for the planning system are higher than with centralized planning. Decentralized planning requirements are especially supported by web-enabled software on the basis of an OLAP or rational data bank. That is because of huge data volumes and activities on various locations.

Planning Methods

In case of bottom-up planning, the detailed planning of lower levels is consolidated upwards. In case of top-down planning, input or at least planned objectives take place on a consolidated level. If necessary, they can be used on lower levels with the help of a **system supported division ("splashing")**. Bottom-up is decentralized planning especially good supported by web-enabled solutions. Thanks to necessary rules and simultaneous administration in multidimensional environment, OLAP tools are suitable for top-down planning.

Regardless of that the short and medium-term periods are viewed through rolling functions such as **rolling forecast**, often in direct relation to **liquidity planning**. Both the rolling forecast and liquidity planning can be easily implemented with the help of ERP-supported solutions. It is thanks to the actual data which is already constantly connected with the planning system.

The selected planning methods often remain in direct interaction with the decision of centralized and decentralized planning. And that is why they have a considerable influence on the selection of tools. In case of smaller companies or centralized planning for the whole company, it is often enough to carry out integrated planning without considering hierarchies.

Sorts of Planning

There are many sorts of planning. We took into consideration some of them:

- **Strategic planning** is characterized by a long, not always precisely defined period, by little consolidated values and a high portion of verbal descriptions.

- **Result planning** is one of the most often applied sorts of planning. It takes place usually as annual planning and is also in the simplest form applied, through projection and past values, in small companies.

- After that usually follows the **integrated profit, balance sheet and finance planning** that is ideally fully integrated. So that payment effects result, among others, from the profit and loss account and from the changes in the balance.

- The **short-term liquidity planning** is widespread as a component of accounting systems in the form of forecast accounts for short periods on the basis of open items. If we want to include open tasks as well as data from the annual planning and therefore determine the medium and long term liquidity, the requirement becomes higher and the spreading accordingly more transparent.

- **Investment planning** comes directly into the balance sheet planning and personnel planning as a basis through personnel costs planning into P&L account planning.

- **Project planning** comes into profit planning too and as a special form of revenues and costs planning for concrete projects.

Already this short summary makes it obvious that thanks to decisions for specific sorts of planning and a system of planning sorts, specific requirements can be defined for planning solutions. There are accordingly different tools for different sorts of planning. An optimal planning system should therefore offer different tools in an uniform user interface and with the fully combined planning results of individual sub-plans.

Target Level of Detail

The **desired or needed level of detail in planning** strongly depends on subjective factors. The trend seems to indicate that a limited level of detail means less effort and higher flexibility (as less data is to be adapted). However, on the other hand limited level of detail means less information available for (deviation-) analyses and reports. The necessary and desired level of detail is always supposed to be defined for an

individual company. Also when the level of controlling maturity, branch, environmental dynamics and other factors have a considerable influence here. A higher level of detail multiplies the volume of data, but it can be sensible or necessary for this specific sector. It often results from planning factors that are based on actual algorithms (personnel costs calculation on the basis of salary calculation etc.).

Data for interfaces have to be often consolidated in order to reduce their volume. Requirements for high level of detail are accordingly supported especially by ERP-supported tools that can access the original detailed data directly, without interfaces.

Providing details and associated requirements for planning and analysis influence the selection of a system essentially. It results from the fact that the system is supposed to illustrate the volume of data and has to support the data consolidation as well as functionality of analysis which bases on that. The planning system has to be able to illustrate a possibility to vary the level of detail according to function or department; or to pre-determine minimum level of detail in the whole company which can be then used by planners if the need arises. The mentioned data consolidation has to make it possible to provide various levels of aggregation for various hierarchy levels.

Summary

The range of this article duet indicates that there is a high complexity hidden behind the selection of planning systems. Unfortunately, its existence cannot be argued away. However, we strongly advise to occupy oneself with aims and environmental factors intensely in the process of selection.

For selection and implementation of a suitable software certain things must be clear. Firstly, what the aims of planning are. Secondly, how the planning and controlling systems are developed and thirdly, which environmental factors have an influence on the system.

References

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