Development of a Project Governance Framework at an automotive supplier focusing on the role of the top management

A Master's Thesis submitted for the degree of
"Master of Business Administration"

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Affidavit

I, DI(FH) Christoph Pöstinger hereby declare,

1. that I am the sole author of the present Master's Thesis "Development of a Project Governance Framework at an automotive supplier focusing on the role of the top management", 94 pages, bound, and that I have not used any source or tool other than those referenced or any other illicit aid or tool and
2. that I have not prior to this date submitted this Master's Thesis as an examination paper in any form in Austria or abroad.

Vienna, 15.November 2010

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Abstract

A variety of scientific studies and books describe proper project management, but how do top managers of big companies set their organizations up in order to deliver successful industrial projects? How can an executive of an automotive supplier take responsibility for more than 200 different projects, dealing with all OEMs and meeting all relevant criteria and targets? Another interesting question is, that despite having project experts employed, still so many projects do not run well at all? One of the most important questions is how a framework should be designed and established to minimize the risk of costly failures. Finally, how well do top managers show and live their commitment towards project management? Do they walk their talk? Many multinational companies share the same experiences, that despite having similar procedures and processes implemented in each location, the results are very different. Looking at the day-to-day activities at one of the world's largest automotive suppliers (MAGNA) with many locations worldwide reveals some reasons for that.

This thesis focuses on the project framework necessary to deliver successful industrial projects within multinational automotive suppliers. Based on interviews with key people – from project management to local general management up to top management from within and outside of MAGNA – the key essentials for a project management framework are outlined.

The first part describes the necessary elements of a framework, based on best practices and the feedback of experienced top managers. Its major topics are:

- Project governance
- Value of project management in the organization
- Management attention (reporting, controlling)
- Responsibility, delegation
- Know-how (finding, improving, keeping)
- Rewarding schemes
- Freedom of action, leeway

The major part shows how all this has been implemented at MAGNA Exteriors & Interiors as part of a project governance initiative. The author analyses the experiences made, being responsible for the design and implementation of the new governance framework. After presenting the newly developed tools, procedures and processes, the impact on the organization is analysed.

One of the main findings is the imbalance of information throughout the organization, resulting in different perceptions. The thesis shows that realizing and removing these gaps is crucial for the successful implementation of a governance framework that links the different needs within a project-oriented company. Rolling out new and transparent processes and tools, achieving sustained improvement, does include the whole organization. Therefore all factors of an organizational change management must be considered. Particular, project managers, who are in the midst of all these activities, need a special focus. Besides pure technical training, the right and necessary appreciation proves to be extremely important to have them supporting this change. However, it is the top management that has to be omnipresent to make it clear to the whole organization why this change is necessary.

This thesis serves as a guideline for top managers to show them how they can do so and what they have to focus on in order to implement a successful project governance framework!

1 Project Management in the Automotive Industry

For decades the automotive industry was known as a market with huge growth rates. All participating players could heavily rely on this trend - OEMs as well as suppliers. Especially the globalization prompted the automotive industry. Today this industry employs over 9 million people. In Germany, for example, the number of vehicles on the roads exploded by more than 300%, coming from 14 million in the 1970s. At the same time the vehicle density rose from 229 vehicles to 540 vehicles per 1000 inhabitants. (Hab/Wagner (2006), p.1).

The customers could also rely on continuously shrinking prices as well as enriched functionalities coming with each new car model. However, the competition within the industry increased and it became more and more difficult for the OEMs to distinguish themselves. This resulted in many different car segments – from spacious family vans to sporty cabriolets to massively hyped sports utility vehicles (SUV). Of course, each OEM had to offer the whole range of cars to its customers. In order to beat the competition, the OEMs not only had to provide a higher variety of cars, but they also put them on the market in shorter and shorter cycles. While the car cycles became increasingly shorter, the number of parts in a vehicle almost exploded to thousands of parts coming from all over the world. To manage this complexity, the old routines of designing, manufacturing and delivering cars wouldn't work any longer. Simultaneous Engineering and outsourcing of content was the key solution.

Shortening the length of model cycles was not always completely in favour of the end customer as more and more half-baked cars had been sold. Designing and engineering faults made it into the sold cars. The return rate of cars noticeable got higher. Return calls and costly reworks had to be done - image loss included. While this remained an issue for particular the European premium car manufacturers for a long time, the Japanese OEMs increased their reputation as manufacturer of 'quality'-cars. But all OEMs had one issue in common. They all tried to limit the number of direct suppliers by purchasing modules and systems to become quicker and to be able to focus on their core competencies. This shift of "value added" enabled some suppliers to grow heavily and – in some cases – became more powerful than

the OEM itself. While less and less OEMs built more and more cars, experts see the number of independent suppliers shrink from 5.500 in 2002 to 2.800 in 2015 (Hab/Wagner (2006), p.4). As a consequence very complex supplier networks started to form. Other specialists who took care of the logistics also became increasingly important partners.

Until today, this environment with its large number of interfaces, which the OEMs have to take care, has gotten increasingly complex. Managing all these requirements and tasks steadily has become a key competence for any successful OEM. Particular in the development process of a car, the efficient management of the whole supply chain proves to be the deciding success factor. Project management has become a key competence and is still one of the biggest challenges for any automotive company today.
Another factor is the enormous cost pressure. As the markets started to saturate in the US and Europe, it has become increasingly difficult to stay profitable. To secure the sales, the cars need to come with more functionality each cycle at lower prices. This circumstance has been constant in this business for years.

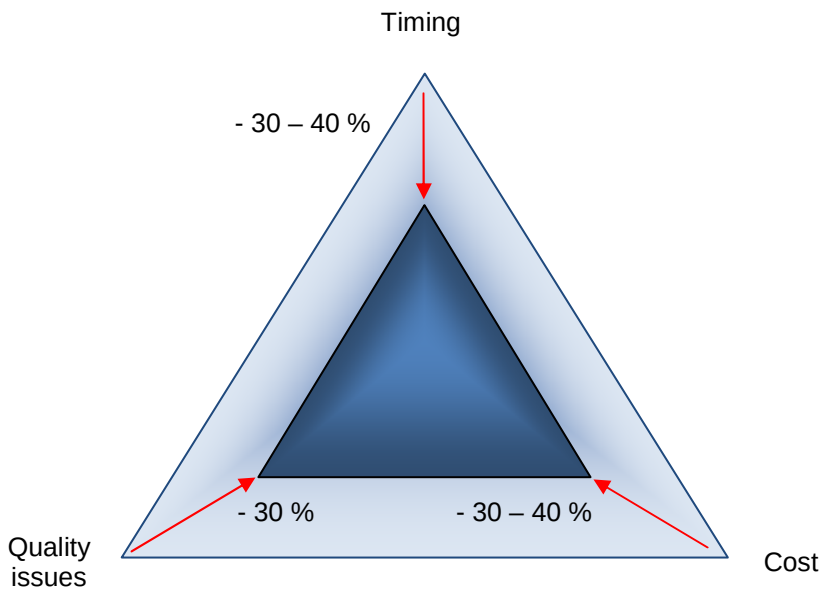


Fig. 1-1: From Magic Triangle to Vicious Triangle (Hab/Wagner (2006), p.9)

The above figure highlights the dependencies between cost, quality and timing. It shows the requirements towards project management extremely well, to deliver cars in a shorter time, with higher quality, at lower cost.

But also other factors shaped the market: Oil crisis, environmental movements, globalization and financial crisis reshaped the automotive market. Particular financial distress periodically puts a focus on overcapacities amongst OEMs and suppliers. Especially in the US and in Europe the existing capacity surplus becomes an increasing problem for the manufacturers. While overcapacities had been accepted for a very long time in order to provide the expected service level, nowadays all OEMs follow the lean approach in their way of producing cars – no matter if they are selling a powerful muscle car or an environmental-friendly city car.

Being in the midst of all these forces, project management has to adept as well. Some companies already realized that and built a framework to strengthen and support project management. Project governance had been born!

2 Project Management versus Project Governance

No one will disagree with the finding that the overall expectations regarding a successful project management are quite high. But why is it then, that despite having so many highly skilled project managers employed, so many projects fail. Failing - means projects that are not meeting the requirements or are not being realized at all. A study, conducted mainly in the IT industry, shows that only a third of the interviewed companies state that they are able to meet the milestones and budgets. Almost half of the interviewed firms say that they regularly overrun the budgets. (The Standish Group International, Inc. (2009)). The interviews of this following automotive research seem to support this result.

Is it possible, that project managers do not have the right support and the right environment in order to deliver the expected output? Could it be that there is a missing link between project management and the rest of the company? Yes, in many cases project management doesn't have the appropriate support and therefore acts on its own without clear guidance. The number of companies that are realizing these discrepancies is increasing rapidly. Some of them are not able to give it a name yet. They only realize that they are having significant problems with effectiveness and efficiency of their project management. But some organizations already wandered through the valley of tears and already know what they have been lacking - project governance. In current literature this phenomena is also called "governance gap". Below figure shows where this gap appears.

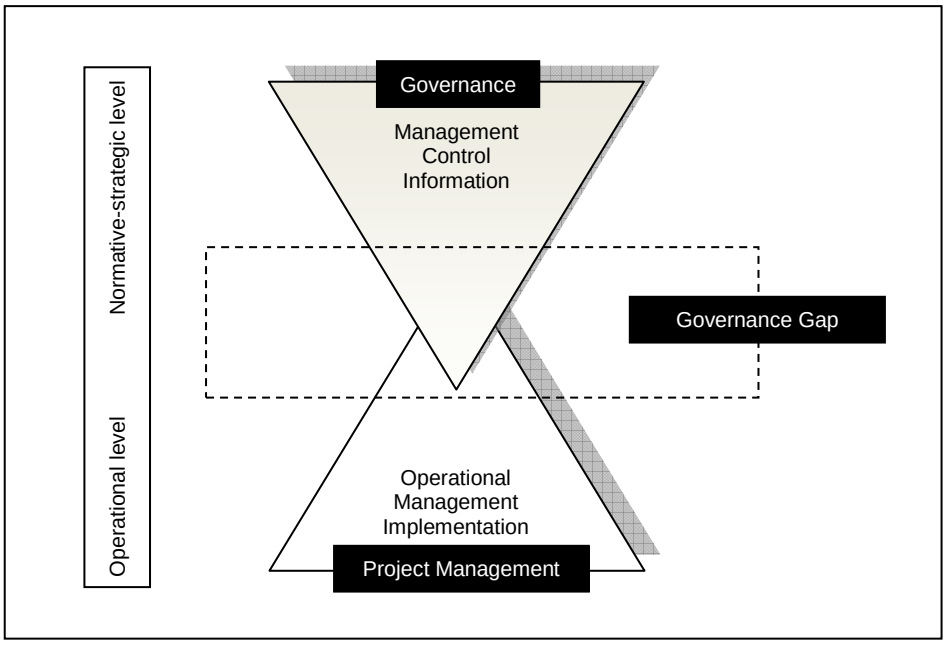


Fig. 2-1: "Governance Gap" (Renz (2007), p.2)

And this is exactly why project governance has such an enormous relevance.

- Project management basically deals with the set of tools a project manager must have to successfully lead the involved parties through a project. This includes planning competencies (timing, quality, cost, resources,…), controlling capabilities, leadership skills and so on. A project manager plans and controls throughout all development phases. In addition he must be familiar with a wide variety of tools such as Digital Mock-Up (DMU), Failure Mode and Effects Analysis (FMEA), Eight Disciplines Problem Solving (8D), Plan-Do-Check-Act-Procedures (PDCA) etc. to meet customer expectations at a very early stage. While all those capabilities are crucial, they are worthless if project management doesn't get the appropriate respect and support within the company.

- Project governance, on the other side, looks at a much wider scope. It answers not only "What should be done" but also "Who should do it, with which competencies and with which tools and processes". It can be seen as a proactive solution

targeting waste and unnecessary costs in a project oriented organization.

The top management must take care that project governance defines the positive environment for an effective project management. It acknowledges that a better project management will lead to up to 30% increase in efficiency (Bullinger, Kiss-Preußinger, Spath, Fraunhofer (2003)) but at the same time the management refuses to clearly define competencies for its managers, leaving the rest of the organization in ambiguity. Without this required project culture and without the necessary focus, the company will never substantially leverage from a project management organization.

Project governance takes care that the project teams can work without internal frictions. All competencies are clearly outlined and all reporting routines are known to everybody. It also provides the tools and standards for the involved people and takes care that all projects are aligned to the company strategy. Review competencies and review cycles are also defined and public within the company.

Müller (Müller (2009), p.30) defines the main goals of project governance to answer “What can be done? (Education, people’s skills,…)”, “What should be done? (Management demands, methodologies,…) and “What is done? (Reviewing the actual perception and performance of the project).

Here are some more issues that should be covered by project governance based on the conducted interviews:

- Improve the cooperation/interfaces with the line organization
- Strengthening the position of project managers
- Define the responsibilities/competencies (particular in start-up phase)
- Linking the project success with the line managers targets
- Make expectations to the project transparent
- Make sure that especially in the project start-up phase all parties are involved and that as much as possible/necessary is covered in the planning phase (front-loading)
- Assure that project management tools are standardized, state-of-the-art and user-friendly

- Make sure that there are no projects that are not verified against the company strategy (process, technology, product,…) and identify those, that don't have an assigned sponsor
- Make internal requirements and milestones transparent to everyone
- Define transparent reporting routines
- Secure sufficient resources (employees, funds,…)
- Assure feedback to the teams
- Provide the appropriate training for the project team members (hard skills, soft skills, career plan,…)
- Encourage team members to build social networks (lessons learned, best practice,…)
- Encourage active involvement of top management
- Implement feedback and improvements quickly

Even though each OEM or supplier has its own understanding of project management, the requirements for project governance will stay the same.
All of the above are especially important when multinational companies with locations around the globe are involved. Unfortunately, very often the prerequisites described above only exist on paper purely for certification purposes but are not part of the daily project culture.
But it is also important to realize what governance is not. Governance is not management – it defines who manages what, then lets those people get on with the job. According to Oakes (Oakes (2008), p.183) governance has a forward- and a backward-looking part. The forward looking part creates the structures to help people to do the right decisions while the backward-looking part is compliance. Compliance helps to demonstrate that decisions were taken in accordance with regulations, policies and objectives.
The following chapter will outline difficulties that will arise from a lack of project governance.

3 Problems resulting from non-existing Governance

Many projects fail because of a lack of governance, which defines the context for the actors. But governance is not only confined to the board level ("operational governance"). Governance is important for all kinds of organizations, ranging from large multinational companies or even countries to small organizations such as project management teams. Without governance the probability of conflicts and inconsistencies with regards to goals, processes, resources and roles increases. This, most likely, results in costly inefficiencies.

Companies with many projects rely heavily on effective project management. Thus it is so important to have transparent but well defined, sometimes rigid, structures in place.

Below figure shows how many different layers, people, functions are involved at an automotive supplier relying on an effective project management. But each of them has most likely a different understanding of the project environment (goals, competencies, resources,…). Even this simple picture is sufficient to show how important it is, that all these people are aligned in all aspects. If they aren't, then there will be a lot of friction among them. Overstressed or underutilized resources, inefficiencies and mistrust as natural consequence will follow. In the worst case a company could face exploded budgets, highly expensive launches or even completely stopped projects.

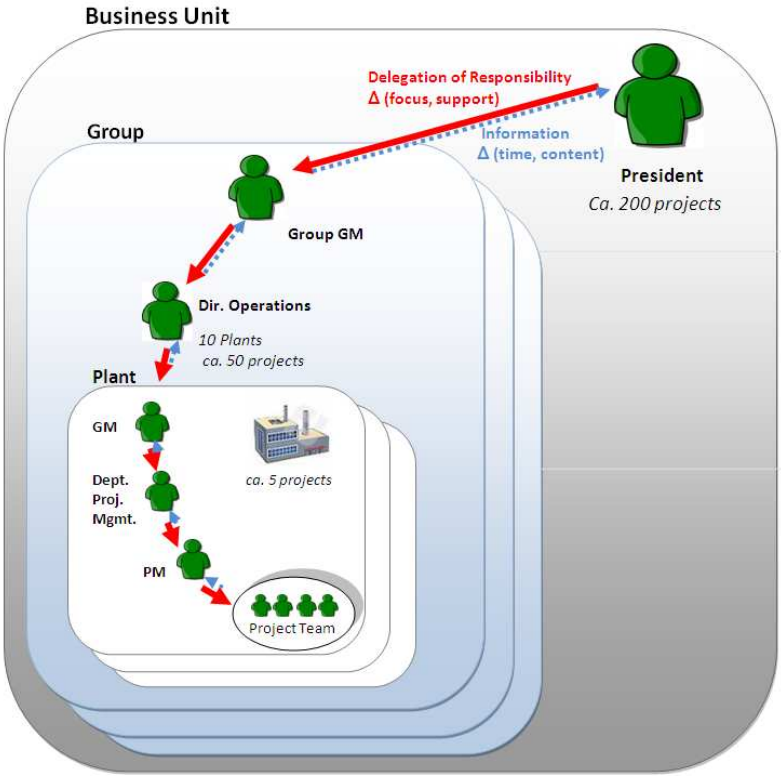


Fig. 3-1: Information-/Delegation- Chain[1]

One big risk comes with the delegation to subordinates, if the responsibilities are not clearly defined (red, solid arrows). Each manager, starting at the top, is delegating responsibility to the next subordinate. Often the project manager is then left by its own without getting the appropriate support. So delegation is necessary in many cases, but a delegation chain that is uncontrolled, carries a high risk.

At the same time it takes very long to bring important information from the project team up to the top management (blue, dotted arrows). Sometimes it is not just the time it takes to get there, but the information is also being filtered and altered a few times. Out-dated or altered information doesn't help to build trust towards the project teams at all. The worst case could be that the customer addresses the top management about problems before the internal project members or responsible managers do so.

With poor governance companies run a high risk to end up in a vicious circle. If things are not aligned then they very often experience a state called "Operative Hectic".

[1] Poestinger 2010, own illustration

The next figure shows how project organizations end up in this state.

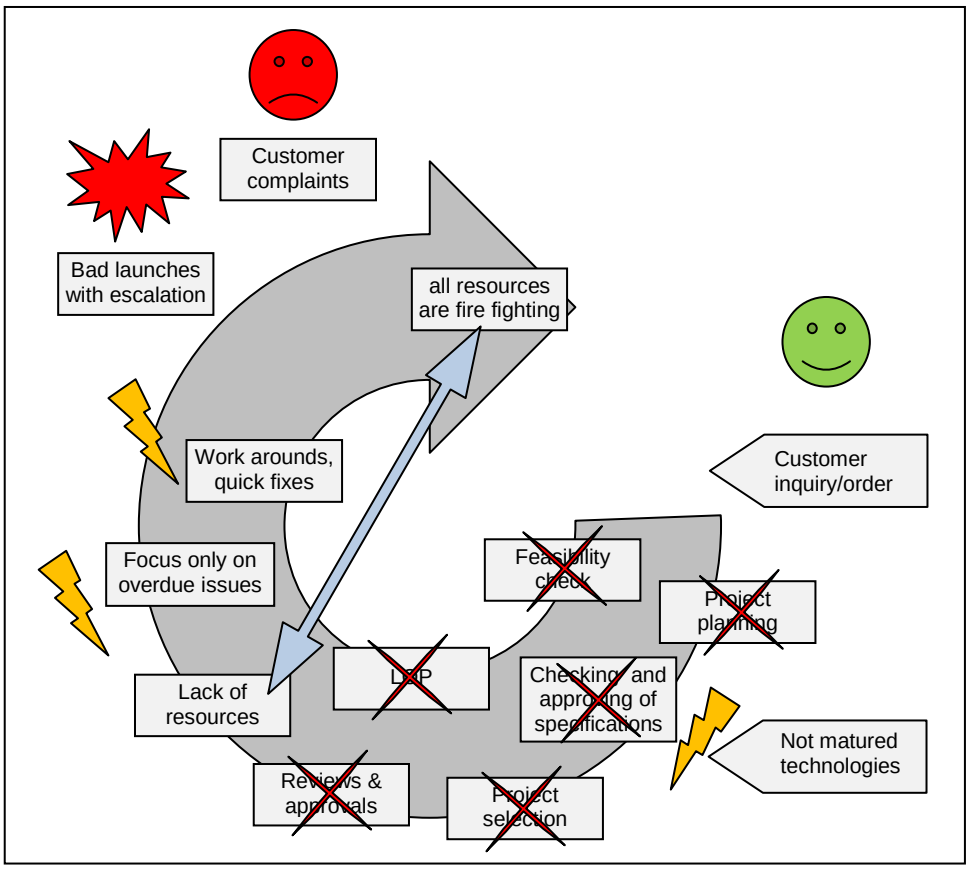


Fig. 3-2: "Operative Hectic" (Hab/Wagner (2006), p.62)

Project governance can and has to reinforce processes, procedures and tools to prevent starting this negative circle. Even if the project or the organization hasn't entered this state yet, it is very likely that the same problems appear over and over again. The following figure groups the typical problems that are encountered during a project life cycle into four categories (organizational, technical, informational and soft).

Almost all of these problems don't result from poor project management capabilities but from missing project governance.

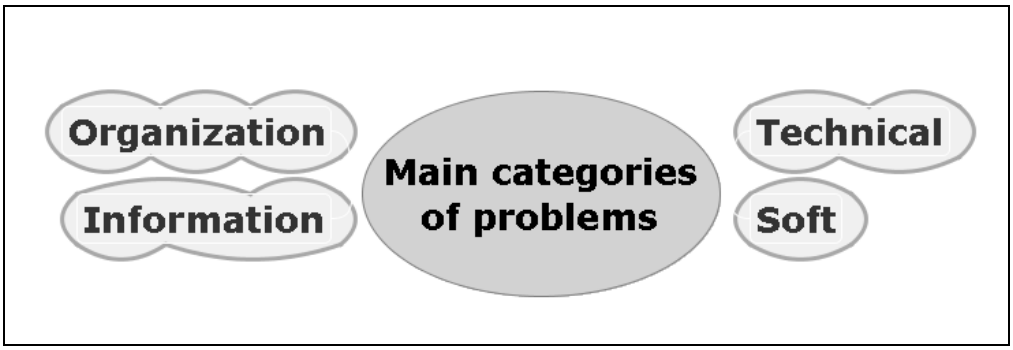


Fig. 3-3: Governance Problems[2]

The following figures show a more detailed listing of regular project governance problems.

<u>Organizational</u>:

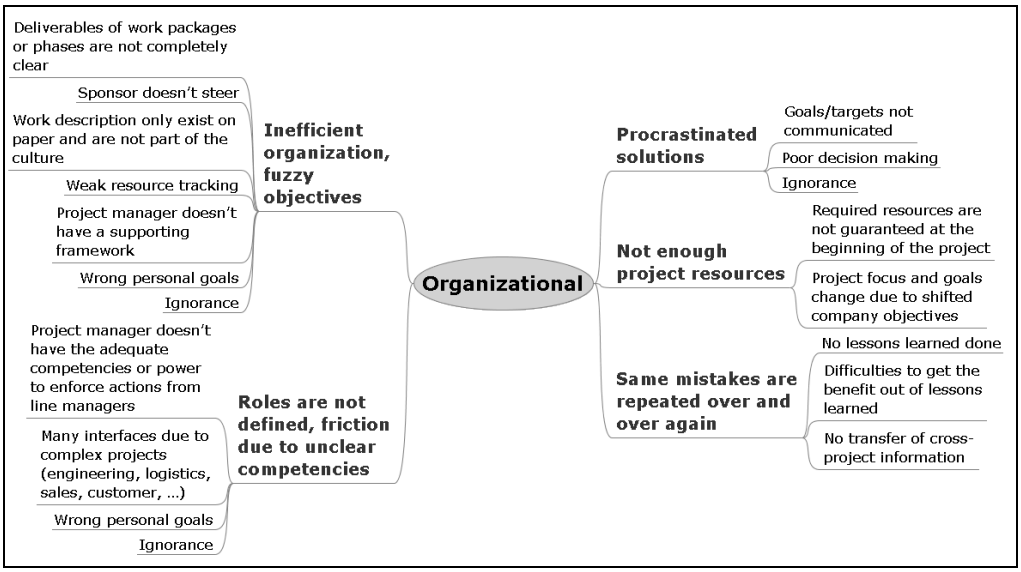


Fig. 3-4: Organizational Problems[3]

[2] Poestinger 2010, own illustration
[3] Poestinger 2010, own illustration

Technical:

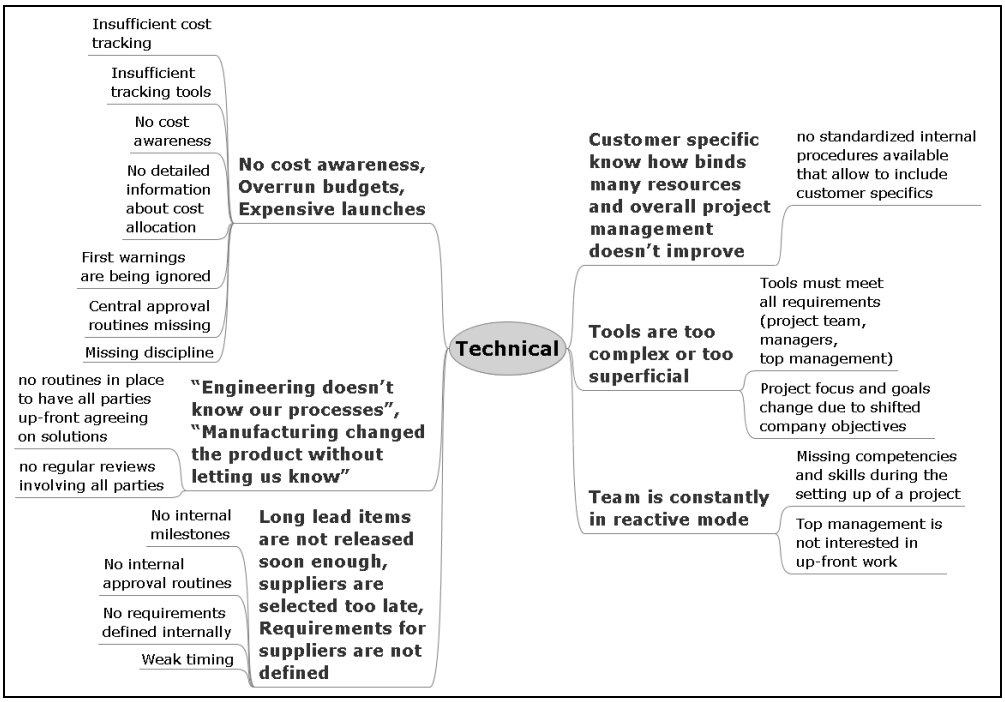


Fig. 3-5: Technical Problems[4]

Information:

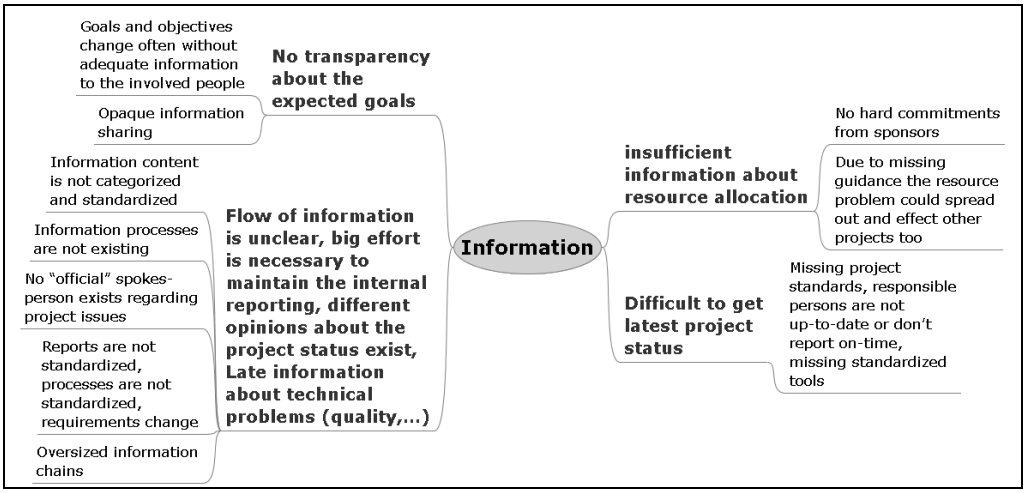


Fig. 3-6: Information Problems[5]

[4] Poestinger 2010, own illustration
[5] Poestinger 2010, own illustration

Soft:

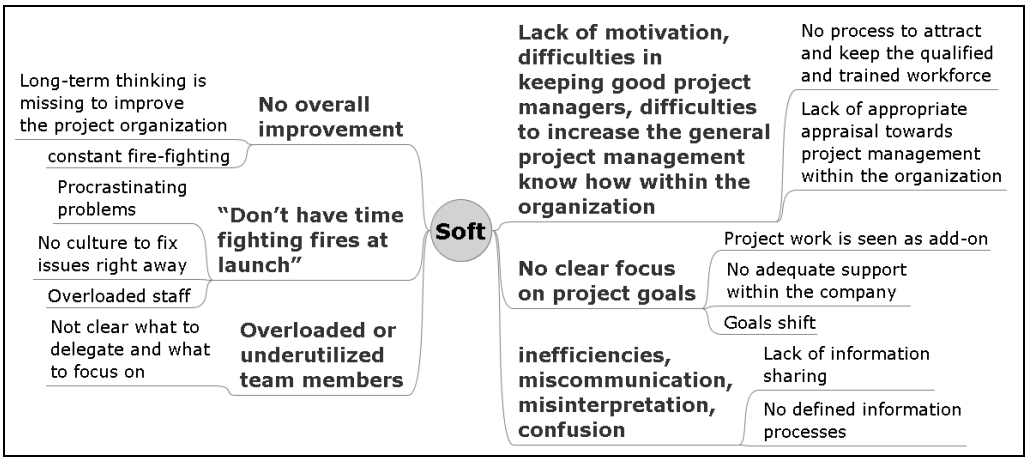


Fig. 3-7: Soft Problems[6]

If a company experiences some of these problems then it should ask itself, if project governance is in place. If so then the next task is to check if it only exists on paper or if it really is implemented properly and if all processes are followed accordingly. Also, if project governance hasn't been an issue so far, then the forward-thinking executives should definitely think about introducing a project governance framework to avoid these issues in future.

[6] Poestinger 2010, own illustration

4 Modern Project Governance approach

Good governance doesn't fall from the sky; it must be learned, practiced and enforced

Jean-Daniel Gerber, Director of the Swiss State Secretariat for Economic Affairs, 2004

The source of many of the above problems is poor governance as stated in the previous chapters. On the following pages the term "governance" will be discussed. The main ingredients for a transparent and effective framework will also be outlined. This framework makes it easier for companies to focus on the most important factors when implementing such an environment.

4.1 What is Governance?

In recent years the term "Corporate Governance" has been used very often. Particularly after the major corporate and accounting scandals including Enron, WorldCom, Siemens and others, it has been very obvious that there has been a lack of transparency and good management. These scandals cost investors billions of US Dollars after the share prices of the aforementioned companies collapsed.

But has it always been the fault of the management? Hasn't it more often been the result of an inadequate system concerning the management of companies in general; a system that supported poor conduct of behaviour, bad steering and lack of control mechanisms? The Sarbanes–Oxley Act of 2002 (SOX), which is a United States federal law, was enacted to enhance the standards for all U.S. public company boards, management and public accounting firms. The act contains a number of rules and regulations – all targeting better corporate governance including internal control and a regulated financial disclosure.

The early definition from OECD (2004) defines corporate governance as a set of relationships between a company's management, board, its

shareholders and other stakeholders. Corporate governance also provides the structure through which the objectives of the company are set, and the means of attaining those objectives and monitoring performance are determined (Johnston (2004)). The same is true for the management of projects where there also has very often been a lack of defined roles and responsibilities, effective steering and reliable assurance.

The word "*govern*" itself derives from the Greek word "*kubernáo*" and is used in many languages. It means "to steer" and is not limited to companies. It refers to all forms of organizations – small business teams to multi-national companies, public and private organizations and even whole countries.
Governance is not determining every single action and role of an organization but gives the conditions and rules (*framework*) for an ordered collaboration. The framework sets the stage for ethical decision making and managerial action within an organization that is based on transparency, accountability and control of tasks.
It needs to be implemented through a framework that guides its actors (managers) in their daily work of making decisions, taking action and controlling the results. In projects, governance implementation is often defined in terms of policies, processes, roles and responsibilities (Müller (2009), p.2).

4.2 Governance Theories

Governance theories define the relationship between the organizational bodies and the actors on their behalf. Since it concerns different aspects, there are different theories existing.

4.2.1 Agency Theory

The Agency Theory describes the conflict between the principals (shareholders) and the agents (managers) of a company. The reason for the conflict is the dependency of the principals from the agents. Because the agents might have different objectives, the principles must have processes and tools to monitor and control the actions of their agents. Since there will always be an imbalance of information, there must be guidelines in place that define the interaction of the principles and agents.

The same is true for projects where principals (sponsors) and agents (project managers) also exist. This is why this theory has such an enormous relevance for project governance. Particular projects which got into difficulties experience this problem. Due to the fact that the mistrust against the agents increased, the principals usually increase the level of structure and reporting. But consequently this now increases the time spent for overhead and ineffective tasks, distracting project managers from solving the relevant issues.

4.2.2 Shareholder Theory

This theory is linked to the Agency Theory and focuses on the relationship of the owners of the company (shareholders) and the agents (managers) where processes and policies are set to the benefit of the shareholders. This typical Anglo-Saxon approach puts the shareholders over the remaining stakeholders.

Interestingly, research by Cooper, Edgett and Kleinschmitt (2004a, 2004b and 2004c) shows that shareholder-oriented companies do not belong to the most successful ones. While in fact they are among the worst ones, it is not exactly investigated yet if their approach is the reason for their bad ranking.

Also in automotive projects it is vital to have the shareholders involved in the course during all times – if not active than at least in regular information routines. Policies and processes help the shareholders to build up the necessary confidence in their agents. The shareholder theory is evident in the project environment as well where there is a similar relationship between the steering group and the project managers. Difficulties can arise when imbalances of information exist. Usually this depends on the contractual obligation from one or the other side. If, for example, project managers are paid on fixed contracts, then they carry a big portion of the risks themselves. At the same time steering groups very often think that everything is taken care of and therefore reduce the level of project participation. This can lead to failing projects. The only possible solution in this case is the fulfillment of the respective obligation and effective communication from both sides.

4.2.3 Stakeholder Theory

The Stakeholder Theory has a much wider focus and also includes all stakeholders such as employees, customers, communities, a.o. This approach also includes social responsibilities regarding various

stakeholders. Sustained growth and balanced relationships within the actors are more important than fast revenues. As mentioned above, automotive projects do have a high number of interfaces to different organizations such as suppliers, customers, logistic providers, engineering partners, associations, legal institutions, governmental institutions, agencies for temporary workers, tooling partners, abroad assembly plants, magazines and journals, a.o. Therefore having them involved in the big project scope will help to get the right support, if needed. Indeed, the stakeholder theory supports the coordinating role of the governing board. However it is questionable if really all stakeholders do have a similar right or if those who have an actual effective power or threat potential are put over the others. In other words stakeholders who could be interesting for strategic reasons are integrated more than others (Renz (2007), p.52).

Besides above mentioned theories, there are even more theories existing that have a high relevance for project governance such as “Theory of resource dependency”, the “Stewardship theory”, the “Institutional theory” and the “Theory of managerial hegemony” (Renz (2007), p.58).

4.2.4 Transaction Cost Economics (TCE)

TCE-Theory is an economic model that looks at the related costs in business transactions. This is particular important when it comes to *make or buy* decisions. Since these transactions (“buying from the market”), need special management, this theory shows the need for specific rules and regulations. In the automotive world outsourcing of goods or services is daily business. But it is not just the saved price that counts, there are costs coming with the transaction of outsourcing. To keep them low and transparent it is necessary to have processes in place that make the transaction a positive one. Understanding this approach has a high relevance for any automotive project manager. Also the support from functional departments within a project could be called transactions, which therefore could rely on defined processes.

4.3 Project Governance as part of Corporate Governance

Governance is not limited to the management of a company. Wherever there is an organization, wherever there are agents and principals, wherever the success of an undertaking depends on the interaction of people, it makes sense to define the conduct of the involved parties in a governance

framework. Thus project governance can be seen as a subset of corporate governance.

As in the financial areas where governance first was installed, governance can, if not introduced the right way, slow down an organization significantly. This may not be neglected. But implemented wisely it increases efficiency and definitely brings visibility to the eyes of the top executives. With project governance it is more obvious what is happening in an organization.

However, in order to receive valid information, there needs to be a higher focus on the accuracy of the presented data throughout all organizational levels.

Again, project governance's major role is one of action and not of control. It ensures that projects are successfully implemented and integrated into the business' operations, sustained, and associated benefits are realized and 'banked' (Subramanian (2009)).

4.4 Project Governance Framework

In order to have a framework that governs the project management, the top management has to consider certain things. The following key issues have to be planned and defined carefully and agreed by all governing bodies:

- Defining objectives & priorities
- Defining business strategy
- Defining policies and standards
- Defining tools and reports
- Defining responsibilities and communication
- Defining assurance processes

Below matrix, defines the duties of the actors within a project governance framework.

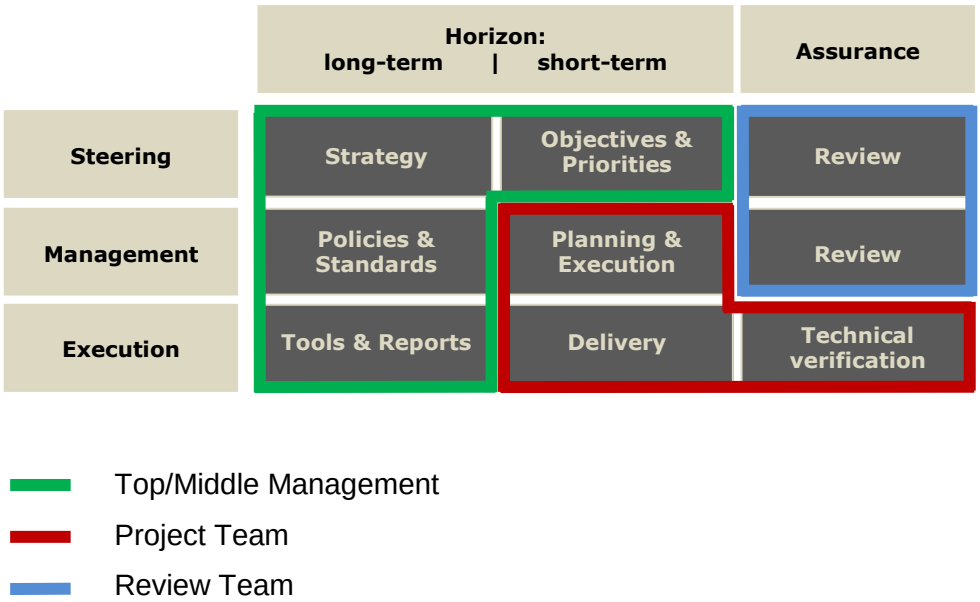


Fig. 4-1: Project Governance Framework

Above figure, which is an alteration of Oakes' Governance Matrix (Oakes (2008), is the skeleton of this thesis. It has been reviewed within MAGNA Exteriors & Interiors and then modified to fit the internal requirements. But also interviews with companies outside the automotive industry showed high acceptance and practicability of this adopted matrix. In addition to the content of the framework, the responsible bodies are highlighted with different colors. No discussions about responsibilities should be necessary from now on. The main objective of above outlined framework is to ensure the proper and consistent delivery of projects. The projects themselves contribute to the company's success and the stakeholders expectations.
In chapter 5 above mentioned core functions will be discussed in more detail.

4.5 Other Project Methodologies

Some methodologies used in different businesses, also define an environment for their projects.

4.5.1 PRINCE2

Prince2 is a project management method of the British Office of Government Commerce (OGC) and has its origin in the UK Government standard for information systems. It too provides a clearly defined framework for managing projects.

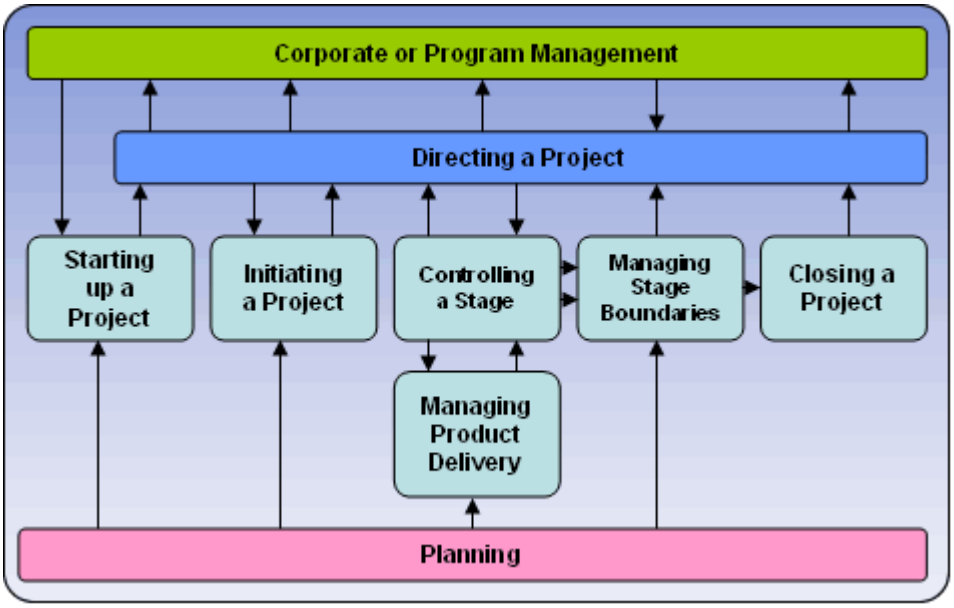


Fig. 4-2: PRINCE2 Process (Prince2 Organization)

PRINCE2 is process-oriented and separates the tasks in manageable units, which are defined through input, output, objectives and activities. It further gives guidance in coordinating people and activities, supervision and how to initiate corrective actions, if needed. This structure also allows the efficient allocation of resources. Prince2 is absolutely transparent for everyone, participating in a project.

4.5.2 Process-based Management

Process-based management is an approach that also defines the policies that govern the operation of the organization. It provides the environment to structure the day to day operation, such as project management, to be aligned with the mission, the goals and the values of the company. It does not provide an ultimate solution with rigid rules that never changes, but instead provides a framework which tries to bring continuity to the involved parties. Two methodologies are mentioned below.

4.5.2.1 Capability Maturity Model Integration (CMMI)

The Capability Maturity Model Integration is a process improvement approach that provides organizations with the essential elements of effective processes that ultimately improve their performance. It can be used to guide process improvement across a project, a division, or an entire organization.

Capability Maturity Model – Integrated

Level	Focus	Process Areas	Result
5 Optimizing	*Continuous process improvement*	Organizational Innovation & Deployment Causal Analysis and Resolution	Productivity & Quality
4 Quantitatively Managed	*Quantitative management*	Organizational Process Performance Quantitative Project Management	
3 Defined	*Process standardization*	Requirements Development Technical Solution Product Integration Verification Validation Organizational Process Focus Organizational Process Definition Organizational Training Integrated Project Management Risk Management Decision Analysis and Resolution	
2 Managed	*Basic project management*	Requirements Management Project Planning Project Monitoring & Control Supplier Agreement Management Measurement and Analysis Process & Product Quality Assurance Configuration Management	
1 Initial	*Competent people and heroics*		

Fig. 4-3: CMM-Integrated (Software Engineering Process Group (2010))

It focuses explicitly on linking the projects to the business objectives, working customer oriented and usage of best practice models. CMMI is mainly used in three different areas (a. product and service acquisition, b. product and service development, c. service establishment, -management, and -delivery) (CMMI (2010)).

4.5.2.2 Software Process Improvement and Capability Determination (SPICE)

Another widely known methodology that has its origin in the software development area is the 'Software Process Improvement and Capability Determination (SPICE) model, also known as ISO/IEC 15504. A branch-specific standard for the automotive industry has been released by the VDA in 2005, called Automotive SPICE®. It is used for the objective assessment of processes and the subsequent improvement of them. The processes are grouped (customer-supplier, engineering, supporting, management, and organization). Also the capability levels of the processes are defined (optimizing, predictable, established, managed, performed, and incomplete).

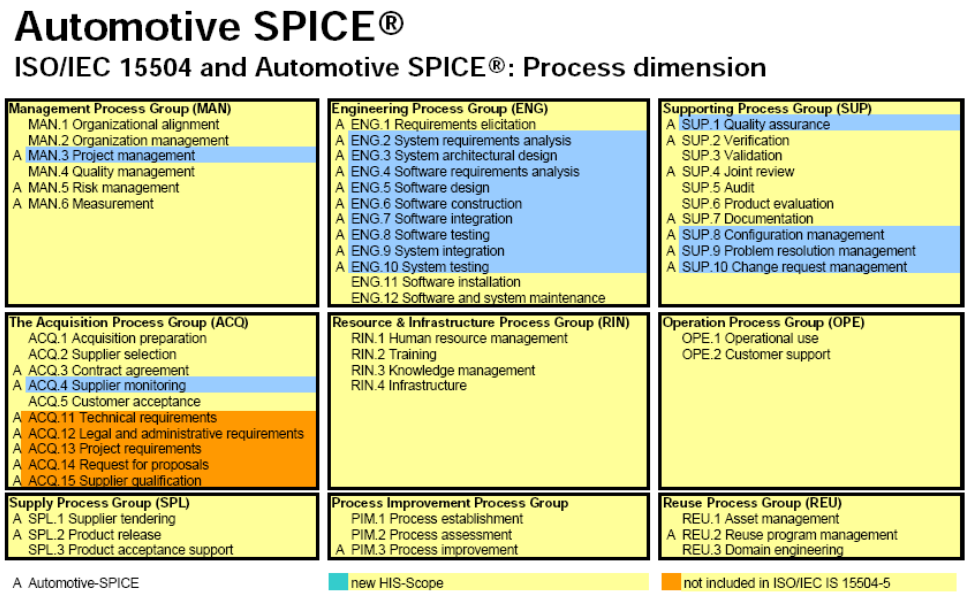


Fig. 4-4: Automotive SPICE® (VDA-QMC (2010))

This model cannot just be used for improving the organizational level but also the project level. Its relevance is increasing due to the soaring software content in new vehicles.

4.6 Evaluating Project Governance

One crucial question remains: Is the company's project governance successful? Many companies measure their project governance by looking at the status of their projects. But it is not as simple as that and very often it is misleading. In other words this would mean that only a few 'red projects' imply good project governance and many 'red projects' indicate bad project governance. It could be true. But it doesn't have to be like that. In fact, project governance needs to be measured differently. It should be judged and evaluated by the savings in regards to cost and efficiency it brings to the projects and the organizations. Optimally, its service is seen as a valuable support within the company. Furthermore a noticeably increased quality of the reporting (accuracy, accessibility, integrity, consistency) comes with good governance. At the best, it should materialize in less project costs due to improved processes. However, it is not that simple to assign a monetary value to 'clear visions and goals', 'improved communications', 'the right support from the stakeholders' or 'appropriate leadership', a.o.

The next question that comes up is: How much project governance is enough? Can there be too much or too little? Müller found out in a research,

carried out on more than 200 international projects, that the best governed projects are clustered around a high level of collaboration (between steering group and project manager, clearness of project objectives, proactive and frequent information sharing,…) and medium levels of operational structure (level of formality and required reporting, tight methodologies) (Müller (2009), p.78). In other words this means that both parties respect each other and have aligned goals in this partnership. At the same time the project managers do accept the level of structure and reporting but have enough freedom and authority to solve day-to-day issues without involvement of the steering group. Of course there is no solution that fits all. It really depends on the size of the projects as well as the size and structure of the organization. It is important that the processes and guidelines should never hinder the success of the projects. The risk that process adherence gets in the way of projects is significantly higher with bigger, more risky projects that show first signs of project failure. Frequent peer reviews will allow finding the right level of governance that meets the requirements of all involved parties.

5 Case Study: Introduction of project governance at MAGNA

The second part of the thesis shows how project governance has been introduced at MAGNA Exteriors & Interiors Europe. The final outcome is the result of a survey, done with several managers at all levels, also from other companies and industries. Their feedback and ideas served as a base for defining the project governance framework. After collecting and assessing their different needs and requirements, data was collected and possible solutions were defined. They were matched with the latest theoretical as well as practical approaches. Guidelines as well as process descriptions were created and then everything was mapped into a project management handbook. In addition, a web-based tool had to be developed and rolled out in order to support this initiative.

5.1 Company Presentation

MAGNA Exteriors & Interiors is a sub group of MAGNA International. MAGNA International is an Austrian-Canadian company that designs, develops and manufactures automotive systems, assemblies, modules and components. Furthermore, it engineers and assembles complete vehicles primarily for sale to original equipment manufacturers (OEMs) of cars and light trucks. MAGNA international is located in 25 countries worldwide, employing approximately 75.000 people. Its sale in 2009 was 17.4 billion USD.

MAGNA Exteriors & Interiors Europe delivers interior parts and modules such as:

- Door Inner Panels,
- Cockpits & IPs,
- Luggage Compartments,
- Carpets & Acoustics,
- Greenhouses

as well as exterior parts such as:

- Bumpers & Front End Modules,
- Sealing- & Glass Systems,
- Exterior trim,
- Exterior Modules,
- Body Panels

to all well-known car manufacturers.

Fig. 5-1: MAGNA Exteriors & Interiors Products (MAGNA (2010))

MAGNA Exteriors & Interiors runs plants in 10 European countries with total sales of about 1.9 billion EUR.

5.2 Interviews

5.2.1 Procedure

The interviewees, representing mostly upper and middle management, had been asked about their assessment of project management within their organizations. The attached questionnaires (see chapter 11) served as a rough guideline but weren't followed strictly in all cases. Their feedback was directly incorporated in this thesis or was even picked up and further developed within MAGNA.

5.2.2 Interviewees

Dipl.-HTL Ing. Erwin Winkler
MAGNA Exteriors & Interiors
President Europe

Dipl. Ing. Olaf Bongwald
MAGNA Mirrors & Closures
Vice President Europe

Dr. Norbert Hofmann
MAGNA STEYR Fahrzeugtechnik AG & Co KG
Director Quality Management &
Organizational Development MAGNA STEYR

Dr. Sabine Stephan
MAGNA Powertrain AG & Co KG
Global Project Management

Dr. Stefan Körber
Continental Automotive Austria GmbH
Projektleitung
Interior - Body & Security, S6 - Customer Center 4

Martin Steigenberger
Continental Automotive Austria GmbH
Director Customer Center
Interior - Body & Security, S6 - Customer Center 4

Ing. Mag. Georg Paulus
SIEMENS AG ÖSTERREICH
Industry - Division Mobility

Werner Gerstacker
Deutsche Telekom AG, Deutschland
Technical Project Management

Various Project managers

5.2.3 Questionnaires

See appendix (see chapter 11)

5.2.4 Summary and major findings

Interestingly all interviewed companies experienced almost the identical problems with lack of project governance. Even if governance was in place, the actual realization on all management levels was sometimes questionable. In many cases it came down to people and how they understood their role as top manager.

Generally the managers had a good understanding how the projects in their organization ran. They could tell almost precisely how many projects they had and how many of them had a red status. This indicates that there is not a lack of project oversight. Some informal structures usually do exist. But inventing the wheel for each new project based on different motivations just cannot be called effective.

Some of the interviewed managers used more formal reporting procedures, others more informal ones. But being involved in reviews on a regular base was almost impossible for everyone. Status reports were, on average, received once per month. On lower levels reporting frequencies went up as once per week. Interestingly, if projects had been reported red for the first time, very often they were already far advanced. The upper management

repeatedly complained about the missing sensibility of project managers or general managers to highlight possible issues at an earlier stage, where countermeasures could have been implemented at a lower cost.

Another common critic was that information about lack of resources or necessary investments usually comes too late. Obviously the plants do feel ashamed to bring these things up earlier and therefore hide them as long as possible. Open communication and a trusting relationship seem to be the only way out. All top managers were aware that their plants couldn't select projects teams as they liked. It was clear that they had to use the resources that were available.

One difficult issue was that they very often got informed about problems from others than their direct reports. So as a direct consequence, MAGNA decided to create an escalation pyramid. This should improve the communication of all major problems that could affect the customers within the internal organization

Everyone acknowledged that the project managers do need to operate in a matrix of responsibilities and therefore have a difficult situation. As a consequence nearly everyone supported the principle that all roles should be clearly defined within project governance. However, the analysis showed that there were even big variances in the definition of project managers. Companies had single project managers with full 'profit and loss (P&L)'-responsibility. Others had this function split in technical and commercial project managers.

Due to the large number of simultaneously managed projects, the same need for standardized reporting routines was also apparent.

Quality has been highlighted as a critical issue very often. Not just the need to improve the product quality, through higher expertise skills and higher review cycles, but also the quality of project managers was questioned.

Every interviewee has been working in quite a complex organization. The organizations were segmented per product groups, customers, regional aspects or a mix of all. They all realized the necessary and increased efforts in regards of alignment and reporting.

In almost all organizations there was a central unit in place that took care about standardizing and harmonization issues. So some of them already had a "soft" PMO installed. However, a fully established PMO hasn't been in place in most cases. Often these bodies have advisory status only, helping

to harmonize processes, setting up and leading project reviews, taking care of prospects, consolidate the reporting, but without full authority to get things done. In some organizations it is almost impossible to link the success of projects to the remuneration of the people because they sometimes have a similar work contract status like civil servants. Changing the contracts or individual goals may not be discussed in such cases.

Some companies do have internal certification programs for their project managers. Instead of rewarding them on a monetary base, they get rewarded with interesting projects. Surprisingly this works quite well!

A lessons learned across different business areas, e.g. cross plants, is not existent in any company.

Project Key Operating Indicators (KOI) are not in place everywhere. But at least one company formulated a clear target for their project management which was “project lead time: minus 3 month, project cost: minus 10 %”.

5.3 Terminology

5.3.1 Automotive Projects

There are thousands of definitions for projects already published. Regardless if it is a building project an organizational project or an automotive projects, all of them do have some attributes in common. One of the best definition which summarizes it the best comes from Gomez who defines projects as a singularly executed endeavour with a certain scope, quality and a financial frame, with a beginning and an end, of particular complexity and interdisciplinary in character (Gomez, Fasnacht, Wasserer & Waldispühl (2002), p.32). In the case of MAGNA this could be: Developing a front bumper for a new car model by using traditional (e.g. injection moulding) or new technological processes and taking care of the complete industrialization in order to supply the customer with a product that meets the quality requirements from ‘start of production’ (SOP) to ‘end of production’ (EOP). The time frame usually is between 2 to 3 years and budget constraints are enormous. The mix of different sub-suppliers, which are located around the globe, brings additional complexity to the project. Within the projects many different areas (e.g. quality management, logistics, sales, purchasing, industrial engineering, R&D, IT, a.o.) need to be linked very closely in order to deliver a successful project.

5.3.2 Project Governance

Before looking at what has been done at MAGNA, the term “project governance” should be defined once more based on the theoretical background of the previous chapters. Project Governance is a process-oriented system by which projects are strategically directed, integrative managed, and holistically controlled, in an entrepreneurial and ethically reflected way, appropriate to the singular, time-wise limited, interdisciplinary and complex context of projects (Renz (2007), p.19).

5.4 Setup

Based on its unique corporate culture and its focus on a very decentralized plant structure, project management at MAGNA was itself extremely heterogeneous. Each plant had its own history and project management was not working after defined standards. In a period of constant growth, it was just not necessary to harmonize the processes in order to be successful. Of course there was a lot of uncovered potential, but for the top management there were more urgent things to focus on. But as the cost pressure kept increasing and as the profits were declining, it was obvious that there was the urgent need to increase the efficiency and reliability of project management. Particular in the last year there were many major launches. Some of them were running so bad, costing a fortune and almost putting single divisions at risk. This background was the actual start of this research. The initial main goal was also to investigate why MAGNA had similar problems in different projects even though good project managers were employed. Furthermore, routines, processes and tools should be developed that should prevent such things from happening again. Finally, the various different reports should be harmonized, reducing the overall reporting effort. Collecting and categorizing the requirements was one of the first major tasks. It was quite demanding as all project participants had to be included and a company-wide solution had to be found with a high level of acceptance. Also, shaping the IT-tool was quite difficult as this needed to support project members of locations throughout the entire continent - from UK to Germany, from Spain to Russia.

But by far the most difficult issue was to have the ideas aligned within the top management and to have the introduction supported within their responsible

areas. The underlying principle was, based on this 6 σ formula (E = Q x A), to reach an optimum effectiveness and an excellent system (E) by improving the quality of the processes (Q) and simultaneously looking for high acceptance (A) at all user levels. It has been clear from the very beginning and this had been also underpinned during the interviews that the best system would not succeed without the approval of the involved people: and this proved to be quite challenging.

Besides describing the internal requirements, interviews with various key people within and outside of MAGNA were conducted. This feedback has been fed directly into the process of shaping project governance.

The statements were in many cases identical. Project governance, if implemented, is aiming at the same goals. One aspect seemed to be in common in all organizations: some discrepancies what is written on the paper and how the company culture really behaves!

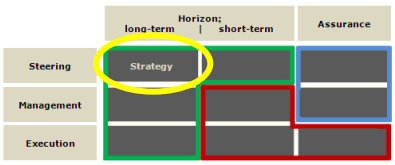
This showed one more time that support and commitment from the top management is crucial!

5.5 MAGNA Project Governance

Based on the earlier discussed governance matrix (see chapter 4) descriptions and definitions for all core functions were found. Below are the summaries and solutions for each section, based on the interviews and the internal needs and requirements.

5.5.1 Responsibilities for Top/Middle Management

5.5.1.1 Strategy



Having a clear strategy for the company is essential for its development. Strategy can include products, technologies, processes and many more. To execute the strategy all future projects must fit to the overall strategy. In other words taking on the wrong projects, even though financially plausible,

could do harm to the overall business. Thus strategy and projects need to be linked very tight. The strategy must be followed at all levels – from top management to local management down to the project level. Strategy determines the goals and objectives of the projects. To be successful a clear top-down communication and understanding of the strategy and the defined goals is necessary. But bottom-up information is essential as well. If necessary, senior management must refine and modify the strategy depending on the performance and the results of the projects.

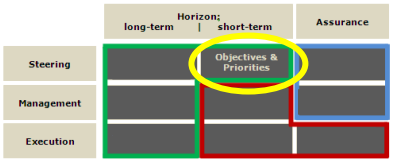
Local general managers must be aware of the role they play in the corporate strategy. They themselves have to facilitate the right environment to launch projects successfully.

It is important to understand that:

- local responsibility stays with local general mangers
- they need to provide resources
- they must strive to establish project management know-how within their division

To assure alignment, regular strategy meetings had been started where possible scenarios, but also final decisions are being made. It has been shown that it is wise to have at least group responsible managers, representing Sales & Marketing, Research and Development, Business Development and others on board. In order to communicate the strategy and break it down on project level, an overall company strategy had to be found. This included product strategies, technology strategies, market strategies and growth-/exit strategies. For some plants these decisions can be extremely painful. At MAGNA in particular this meant to close divisions, stop quoting for certain businesses or invest in other business areas. To agree on such essential decisions it needed lots of expertise, data, trust, commitment and communication.

5.5.1.2 Objectives & Priorities



After defining the corporate business strategy, the top management has to check every new project, program or portfolio against the long-term strategy because there is an interdependency of both. The strategy defines the goals of the company and thus the required goals and objectives of the projects. Besides defining the objectives, it can be necessary to prioritize possible projects. Very often this is done by a Project Management Office (PMO), which can act as the link between the business and the projects. Another task of this unit is to check possible projects against the strategy and the objectives and suggest GOs or NOGOs to the top management. If the project fits to the business then, of course, it needs to be checked if it meets the internal financial requirements. These usually are EBIT, ROFE, IRR, CAPEX, a.o.

It is very common to look at financial factors only. However, the reality is far more complex and also non-financial criteria should be included within the project selection process. According to Meredith/Mantel (Meredith/Mantel (2002, p.45) such factors could be:

- Production factors (capacities, requirements, waste, process safety/stability, raw material usage, impact on current suppliers,…)
- Marketing factors (probable market share, impact on current product line, estimated life of output,…)
- Financial factors (profitability/net present value, payback period, internal rate of return, impact on cash flows,…)
- Personnel factors (labor skill requirement, level of resistance from current work force, impact on working conditions,…)
- Administrative and miscellaneous factors (meet governmental safety and environmental standards, patent protection, impact on image with

customers, suppliers and competitors, managerial capability to direct and control new process,…)

In order to come to a decision, the author suggests the usage of models. Models can be classified into numeric and non-numeric models.

Non-numeric models focus mainly on the necessity (operating/competitive) of projects. Also, possible influences to existing products and processes should be assessed. Finally, comparison models, based on the potential benefit for the organization, can help to decide on the right projects.

Numeric models usually include the classical factors such as profitability, internal rate of return, net present value, a.o. Even though these models are widely used, their main disadvantage is the focus on a single decision criterion.

Scoring models can overcome this disadvantage. They can be set up in different ways – from simple to extremely complex. Scoring models basically contain a list of different factors, which can then be evaluated (yes/no, 1….5,…). These factors can also be weighted to highlight their specific importance.

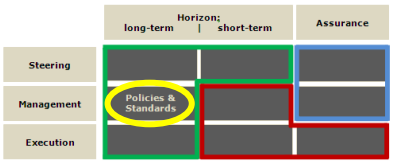
Especially in a complex environment, such as the automotive industry, the usage of such transparent models makes a lot of sense. Decisions can be quantified and documented very easily and do not suffer from short term perceptions. They have their relevance particular for projects that are strategically important but which don't meet the financial requirements. Such projects typically are R & D projects or greenfield projects.

If it is agreed to take on the project, the governance framework further defines the roles and responsibilities as well as the interaction of the involved participants including the assurance responsibilities. Ultimately the guidelines, defined in the governance, should assure the financial success of the project and that shareholder expectations are met. Final decisions are being made in regular classification meetings where the projects are challenged against the strategy and where objectives and goals are evaluated.

During this study it was obvious in repeated occasions that top managers and project managers weren't speaking the same language. Everyone was referring the objectives and strategies to his own micro-cosmos. Based on this informational imbalance (agency theory), they verbally agreed on the

same things but mentally were far apart. This becomes even more important if strategies or goals change. Giving background information, explaining situations and having an open discourse helps to bring the sufficient level of information down to the project teams. Consequently this means that the targets are clearly communicated in a non-ambiguous way. This is not always easy for upper management as they also have to deal with uncertainty and they themselves are not always able to go public with the information they have due to the confidential content.

5.5.1.3 Policies & Standards



5.5.1.3.1 Project Structure Plan (PSP) / Work Breakdown Structure (WBS)

During one of the first initiatives, a project structure plan and a function matrix (RASIC) have been developed. Both documents are controlled documents and are valid across the entire group. Major goal was to have a cross-divisional template that covers all customer requirements, the quality management requirements (VDA, ISO TS) and all internal requirements. The Project Structure Plan (PSP/WBS) is suitable for all automotive projects regardless of the product or the technological processes involved. Defining and rolling out the PSP has been quite a challenge. To define the standards, each plant had to define a champion, taking part in the steering board. But not just each plant was represented but also each core function. Particular those core functions which were organized centrally played an important role. These were among others Sales, Development & Design, Purchasing,…

Including all plants and functions in this early phase was very important as it showed from the very beginning that this was a common undertaking and this wasn't something which was enforced from above. Some loops of redefining and modifying were necessary to have a final PSP, widely accepted by the organization. It is necessary to allow enough time for the

plants to match the PSP with their internal processes and update them accordingly.

The Project Structure Plan (PSP) or Work Breakdown Structure (WBS) is a core element. It defines the discrete work units and is a vital instrument for a common understanding of the expected work. It needs to be defined according to the company's and the project's requirements, how many manageable work units are shown in the PSPs/WBSs. In the automotive industry, where projects usually do look quite similar, it makes sense to agree on a general PSP/WBS. Sometimes a PSP/WBS shows work that needs to be done and sometimes it shows the products that need to be delivered. In any way it is important that all work is listed in the structure. Below figure shows an example of a WBS.

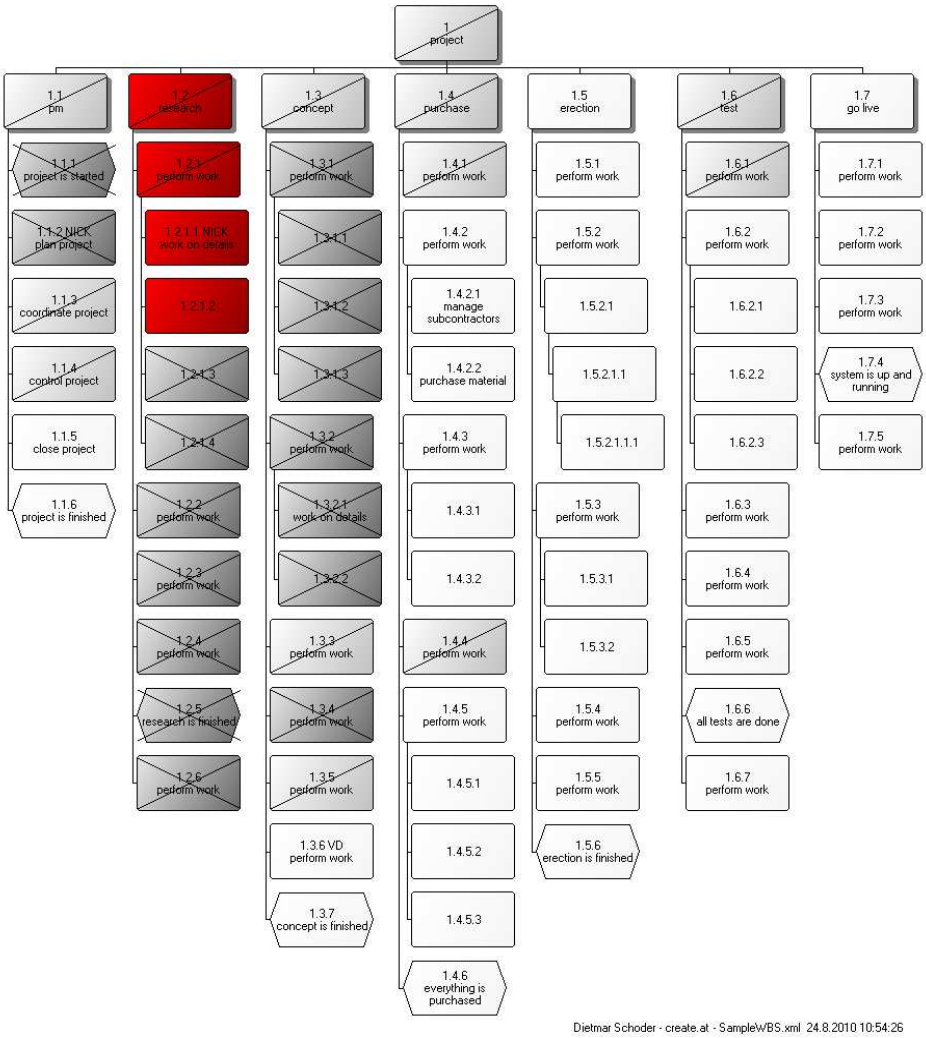


Fig. 5-2: PSP/WBS (Schoder (2010))

Certain marks (e.g. criss-cross,…) give a quick overview about the time status (open, in progress, finished) while different colours show the quality status (green, yellow, red).

But a PSP/WBS can also be illustrated in different ways. One possibility is the following one. This illustration doesn't just show what to do but also in which phase and whose responsibility it is. As MAGNA has a very functional organization, this illustration fits better to its needs. The PSP is one of MAGNA's central core documents.

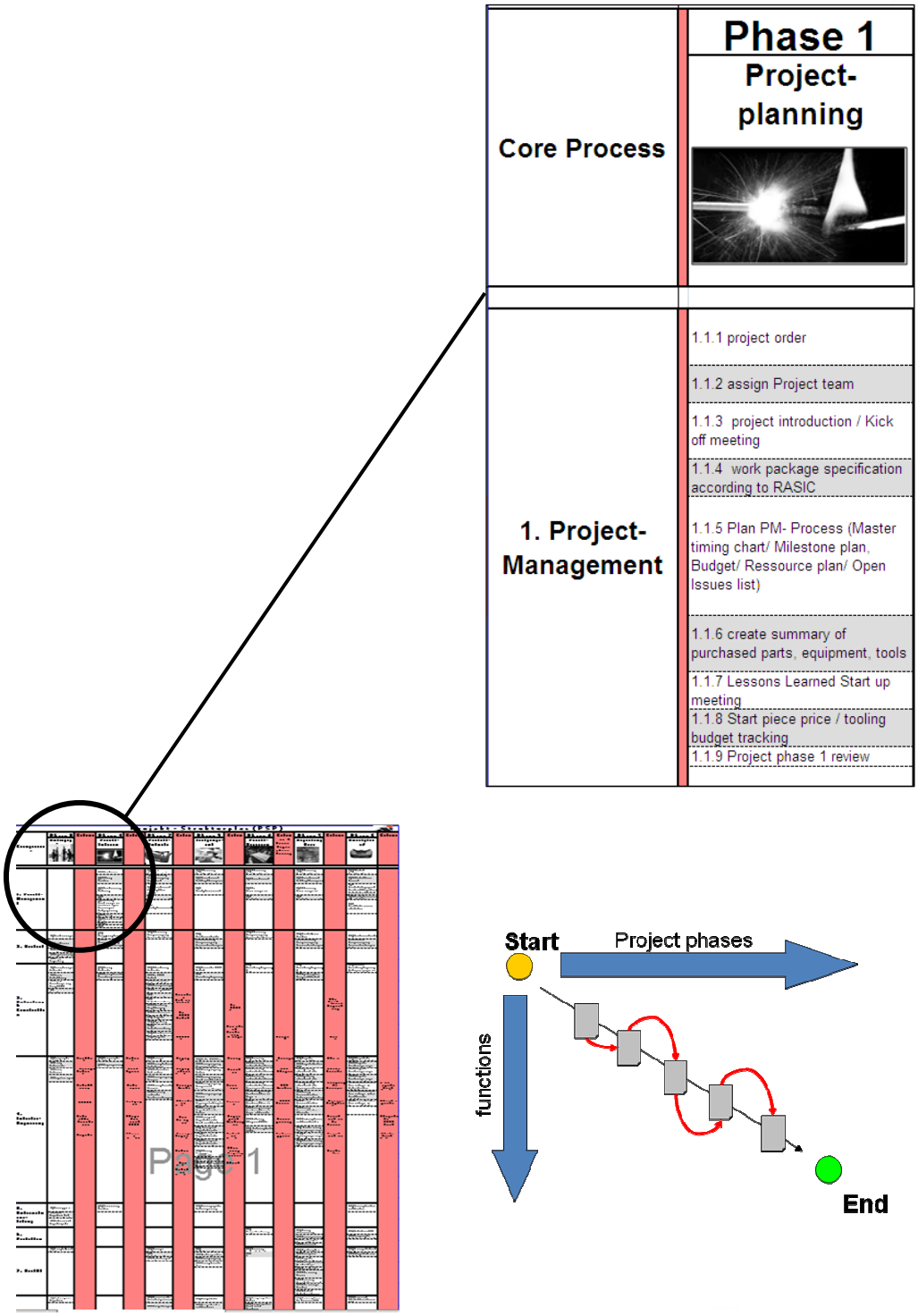


Fig. 5-3: PSP/WBS (MAGNA (2009))

Both structures are based on the 100%-rule saying that all defined work elements need to be accomplished in order to successfully complete the project. To have a solid basement and a common understanding these structures should not change very often on a corporate level.

The PSP that has been developed for MAGNA shows around 220 work packages covering all involved functions. These are Project Management, Sales, Design & Engineering, Industrial Engineering, General Management, Production, Quality, Procurement, Logistics, Finance & Controlling, Environmental, Health & Safety, IT, and Building & Infrastructure. The life span of a project is approximately 3 years.

Within these 3 years each project passes several project phases. These phases are:

- Request for Quotation (RFQ)-phase
- Project Planning phase
- Product Development phase
- Manufacturing and Process Planning phase
- Project Execution phase
- Try-out-Series phase
- Start-Up phase

5.5.1.3.2 Function Matrix (RASIC)

In above examples of PSP/WBS the functions are not very detailed. One option to further specify the work packages is the use of RASIC. It breaks down each work package into so called tasks. In addition, it shows which department really is taking care of the discrete work packages.

RASIC defines who is responsible, has to approve, has to support, needs to be informed, or needs to be consulted. Besides giving the individual plants more freedom in assigning the specific work, it additionally allows them to even more detail or modify the work packages without breaking the link to the general PSP.

Below RASIC shows an example.

PSP - neu	PLANT NAME RASIC-Chart R = Responsible A = Approve S = Support I = Information C = Consult	optional	Kernprozesse / Core Processes													Support		
			1. Project management	2. Vertrieb / Sales	3. Entwicklung & Konstruktion Design & Engineering - PDC	4.Industrial Engineering	5. Unternehmensleitung Management	6. Produktion / Production	7. Qualität / Quality	8. Einkauf (Beschaffung) Purchasing (procurement)	9. Logistik / Logistics	10. Finance & Controlling	11. Umwelt, Gesundheit und Sicherheit Environment, Health & Safety	12. EDV / IT	13. Gebäude & Infrastruktur construction & infrastructure	Hum Ressources / Personalabteilung	VA/VE	....
1.1.9	**Project phase review 1**																	
1.1.9	Execute phase release with project team leader			I	I													
1.2.1	**Contract examination and Project release**																	
1.2.1	Contract checkup of incoming order in accordance with offer			R		I												
1.2.1	Contract checkup via legal department if necessary			R			S											
1.2.1	Order confirmation to customer			R	I	I	I											
1.2.1	Order release after contract checkup to production plant			R	I	I	I											
1.2.2	**Start tracking of piece price / cost negotiation / change management**																	
1.2.2	Preparation of Contract Alteration list			R		S												
1.2.2	Obtain price completion from customer/ Change management			R		S												
1.2.2	Capture incoming modification enquiries			R		S												
1.2.2	Determine modification costs				S	R		S	S	S	S	S	S	S	S			
1.2.2	Release of modification costs					R	A											
1.2.2	Preparation of customer specific calculation templates			R		S		S	S	S	S	S	S	S	S			
1.2.2	Written tender preparation			R														
1.2.2	Tender examination sales/ plant			R		A	A											
1.2.2	Written change offer to the customer			R		S												
1.2.2	Incoming order documented			R	I	I	I											
1.2.2	Clarification of reasons for a refusal and information to the plant			R	I	I	I											

Fig. 5-4: RASIC (MAGNA (2009))

The steering committee for defining the PSP has also been in charge for specifying the RASIC. The golden rule is to specify as much as possible but still leaving enough leeway for the plants to bring in their specifics. After the final approval of the RASIC each plant had to finalize a plant specific RASIC. To do so, all functional heads sat together defining the responsibilities of the tasks. The final document is a core document. It defines the interfaces between departments very clearly and helps work package responsible to clarify the work packages. It furthermore makes it very easy for new project team members to start with project work very effectively. The RASIC is the right document for the plant to bring in product or process specifics, such as interior or exterior product, injection molding specifics or textile process specifics. The RASIC can also define the interfaces to the customer. Today the PSP and the RASIC are controlled documents.

5.5.1.3.3 *Milestones*

When setting the standards it was necessary to define the internal requirements. As project milestones differ from project to project, customer to customer and product to product, common milestones needed to be identified.

Below is a figure of the finally standardized milestones.

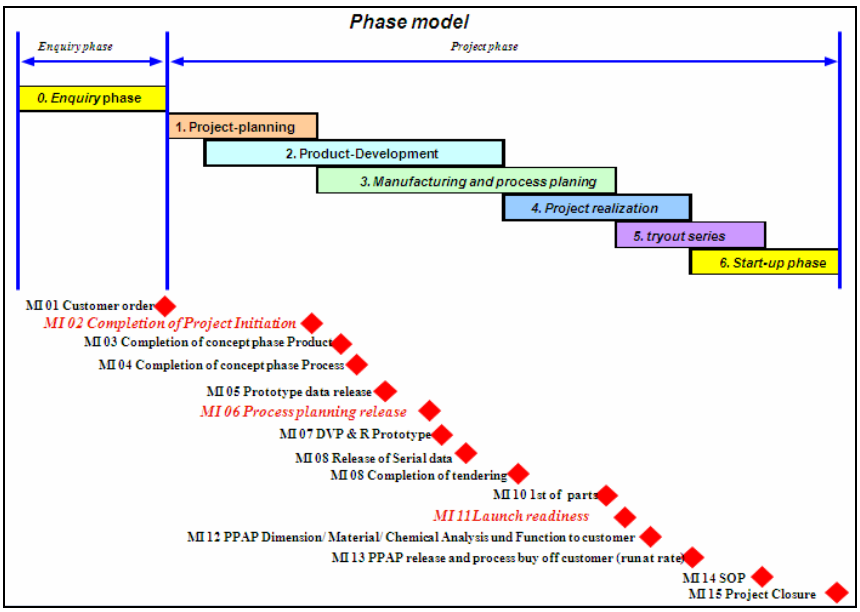


Fig. 5-5: Internal Milestones (MAGNA (2009))

Together with the milestones, standardized checklists were released.

Above chart also shows the overlapping of the project phases. In some industries, real GO/NOGO-synchronization-points, where a decision is needed to proceed or to stop the project, are quite normal.

In the automotive world however, quitting or stopping a project is usually no option for a supplier. Therefore the project teams do have to work in two or even three phases simultaneously. This fact is illustrated in above figure very well. Usually the risk is completely located at the supplier side which makes it even more difficult to deliver successful projects. During this research, there were several projects reviewed, where the supplier didn't even receive a written project order or confirmation until the very last project phase.

5.5.1.3.4 *Timing*

The timing is of course essential to be able to define and track the progress of the project. Several tools using different methods are available. The most often used one is MS Project from Microsoft. It is based on PERT and allows

easy tracking of the work packages and their associated dates. Resources can be assigned quite easy and monitored regarding their workload.

Most important is to highlight the work packages which are on the critical path and therefore need special focus. This allows the project manager to avoid problems that could potentially defer the project end date.

The timing is also essential because it is the basis for the resource capacity planning. A solid capacity planning is especially important in a multi-project environment, where resources are allocated to several projects at the same time.

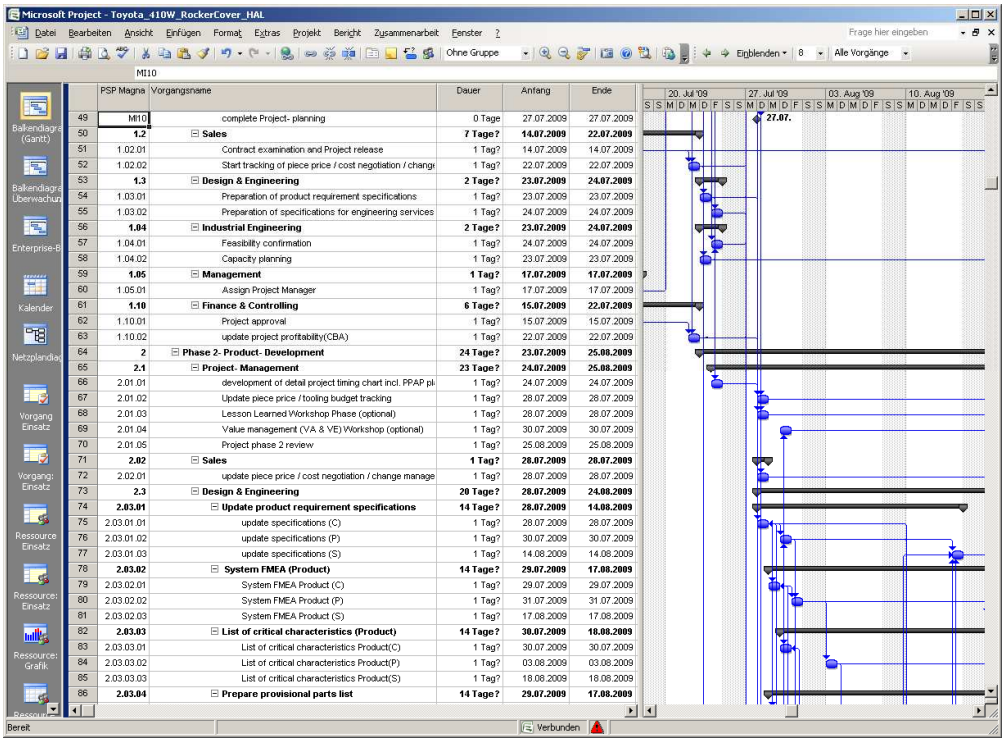


Fig. 5-6: Timing (MAGNA (2009)

PSP, RASIC, project plan and the timing are all linked. They all are based on the same work packages.

Rolling out a standard timing across a whole group proved to be one of the most difficult tasks. Missing MS Project know how, different customer formats which are not easy to transform into a standard timing format, bandwidth issues when working with a central server, just to name a few of the obstacles. It is up to the project manager how many details are integrated in the timing. Detailed timings which integrate sub-timings can become very complex. The chance that an inexperienced project manager gets lost in a dynamic network plan, are quite high. To get complexity out, it

is useful to have at least certain milestones for synchronization purposes, but not to include each and every sub-timing.

After setting up the rough timing, optimizing the planning is necessary. Usually three areas can and should be optimized (Hab/Wagner (2006), p.130).

a. *Shortening the time* by:
    a. Determine work packages which are on the critical path
    b. Parallelize work
    c. Increase resources at critical work packages
    d. Increase performance and productivity

b. *Reducing cost* by:
    a. Determine possible savings
    b. Reduce complexity in specifications
    c. Benchmarking and global sourcing
    d. Look out for alternatives (materials, technologies, suppliers,…)
    e. Re-use of existing solutions (standardization,…)

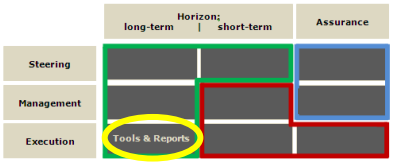
c. Optimizing resource allocation by:
    a. Re-arrange work package sequences
    b. Outsourcing
    c. Standardization
    d. Integrate suppliers in optimizing the work
    e. Look out for technological alternatives

5.5.1.3.5 Guiding standards

Automotive standards, such as TS 16949, ISO9001, QS 9000, VDA 6.2, also require a professional management of projects. The project management relevant instruments are mostly covered within Production Part Approval Process (PPAP) and Advanced Product Quality Planning (APQP). They require the description of existing project phases, control plans, timing, tasks and responsibilities as well as goals. In addition each company should have other guiding standards which should be met. These can be financial requirements, which define the financial processes such as the project calculation model. Other standards to follow could be logistics standards, manufacturing standards or IT standards.

Defining and setting up the policies and standards proved to be one of the most important actions. It was important to find a solution that the majority of the involved people could agree with. Therefore, each of the central departments got their share in defining the needs and requirements of the specific departments. In such a widespread organization like MAGNA this can be quite a task. Asking for punctual suggestions as well as final decisions on time was important. But only with this broad acceptance this task could be tackled, but also the divisions got their share. Lead plants were defined that helped to shape the standards from a plants perspective. After final inspection the guidelines needed to be approved from top management and thereafter were released via the quality management systems. Looking back, this procedure worked well and was absolutely necessary to proceed further.

5.5.1.4 Tools & Reports



In order to work according to defined standards, it is ultimately not necessary to have standardized tools in place to support the process. But the decision to work with standardized tools will definitely improve the way the projects are handled. Prerequisite is the extensive training of all involved parties. Also the implementation and roll-out of such a tool can be quite an undertaking for a company that needs to be well planned. Good tools that help the project managers will also allow homogenous reporting. Therefore the top management needs to specify which key parameters they are interested in. Below there is a brief description of tools and reports that are used within MAGNA Exteriors & Interiors.

Defining and rolling out the tools was definitely underestimated. Even though most of the eventualities were included in the roll-out, having IT on board at a very early stage, rolling this out was a big organizational change for most of the units and divisions. As with many changes, this roll-out included a big

portion of the local organization. The rough guidelines and the necessary technical support were given from the head office, but a proper change management was not provided. The divisions had to take care of that. So dealing with different mentalities, hidden agendas or divergent goals, needed more focus than expected.

5.5.1.4.1 MAPS (Magna Project Management System)

The system that supports the process is web-based. The master timing is done via MS Project Server. Documents and websites are linked in a MS SharePoint application. The application allows fast entering of information regarding specific work packages. Documents are stored in a document management system that is coming with the application.

From the main page which can be accessed within the company network, easy access to all relevant tools and reports is possible.

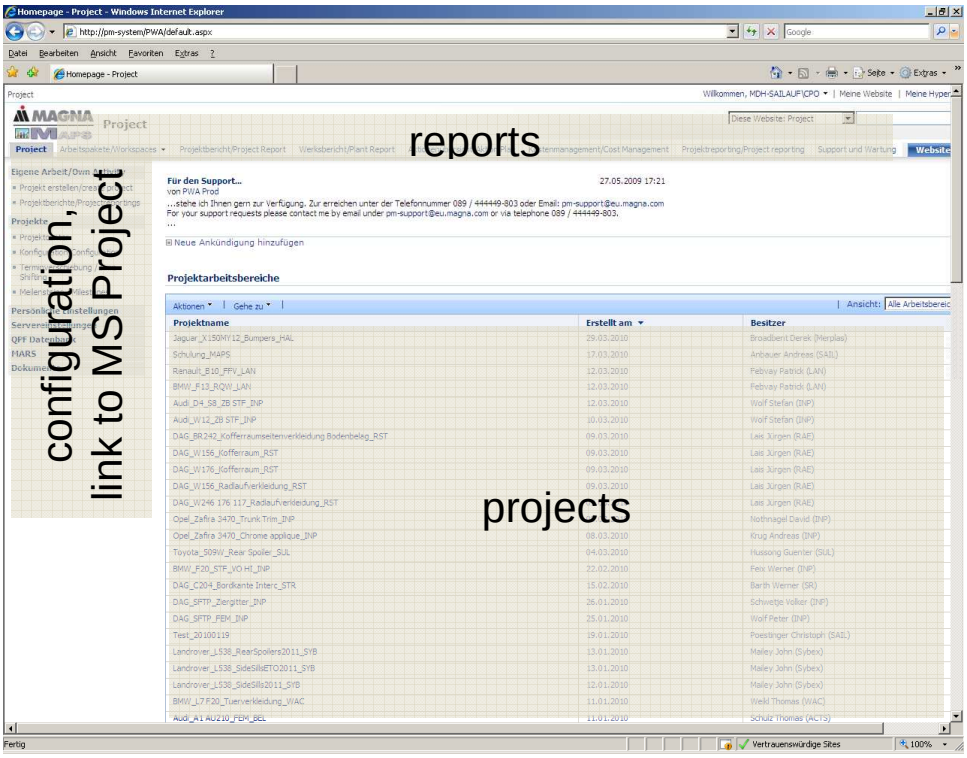


Fig. 5-7: MAPS Main Page (MAGNA (2009))

The master timing can be opened via a web applet or being accessed directly within MS Project.

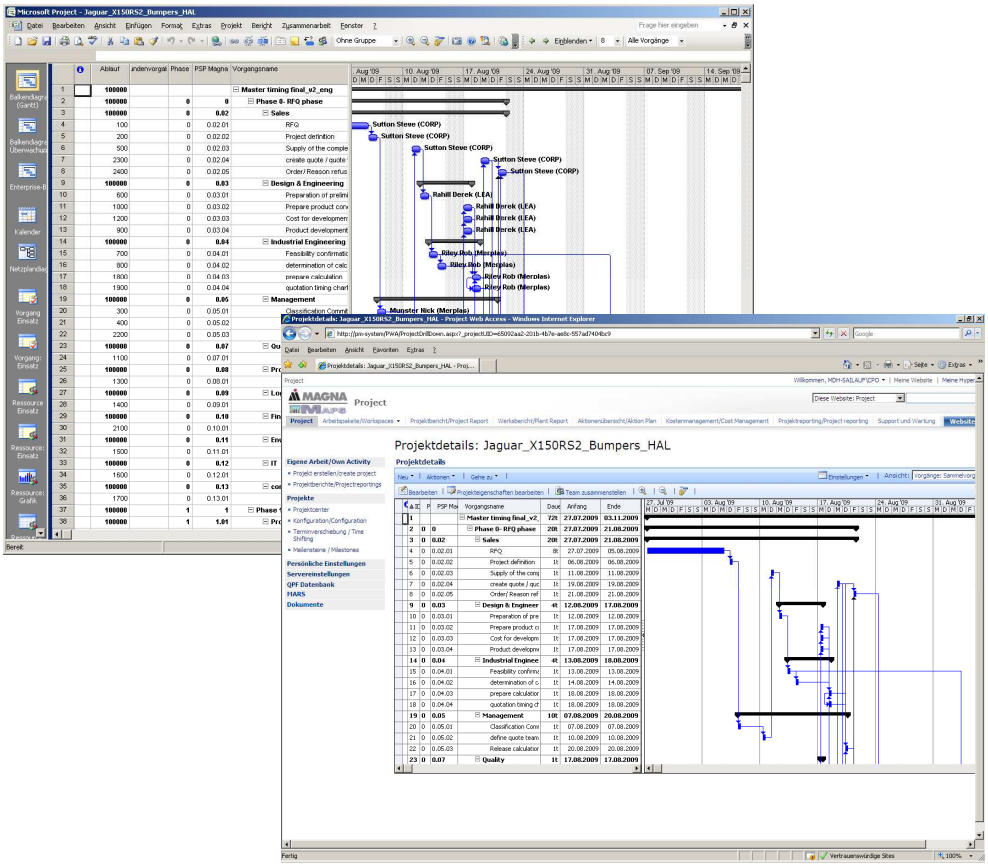


Fig. 5-8: MAPS Master Timing Server/Web (MAGNA (2009))

Modifications, such as assigning different users, modifying delivery times, etc. can even be done directly in the Web interface.

5.5.1.4.2 Project Reports, Plant Reports, Monthly Project Reports

One of the main reasons for reports is the early detection of projects in trouble. If difficult projects are not identified at an early stage, this could put an entire company at risk. Particular in a multinational company this is a very critical issue, which needs clear commitment from the top executives. In order to be able to get reliable, compact information, all the reports from all subsidiaries, dislocated plants and customer based units need to be harmonized. This means that the content, format, reporting cycles need to be clearly defined. But this also implies that the process must be set up in a clever way to leave enough leeway for regional, plant specific issues but also to avoid ineffective double reporting. Without a simple and comprehensible design, reporting will stay a Sisyphus work with additional resources needed to combine the different reports.

For introducing project governance at MAGNA it was a requirement to eliminate excessive reporting effort. At the same time the goal was to standardize the reports from all plants (different languages, different products, different customers,…). Information coming from the project teams should directly feed into the top management reports without showing too many details. Following picture shows this bottom up approach.

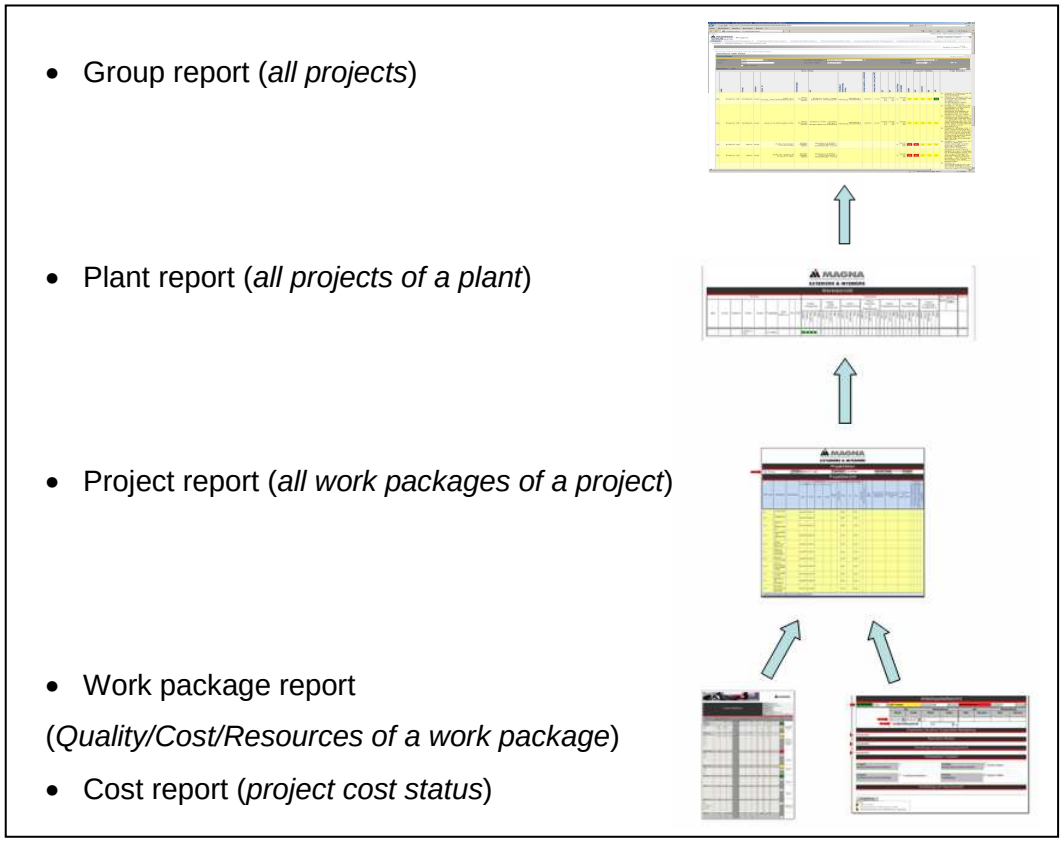


Fig. 5-9: MAPS Reporting Structure (MAGNA (2009)**)**

Basically each report feeds into the next one without necessary additional input of data. Report information can be assessed on a lower level, if required.

All reports that had been designed are discussed below.

The project report is the central control element which is visible to all project team members. It shows all work packages as well as the current status for each work package. In addition it holds detailed information for all phase gateways.

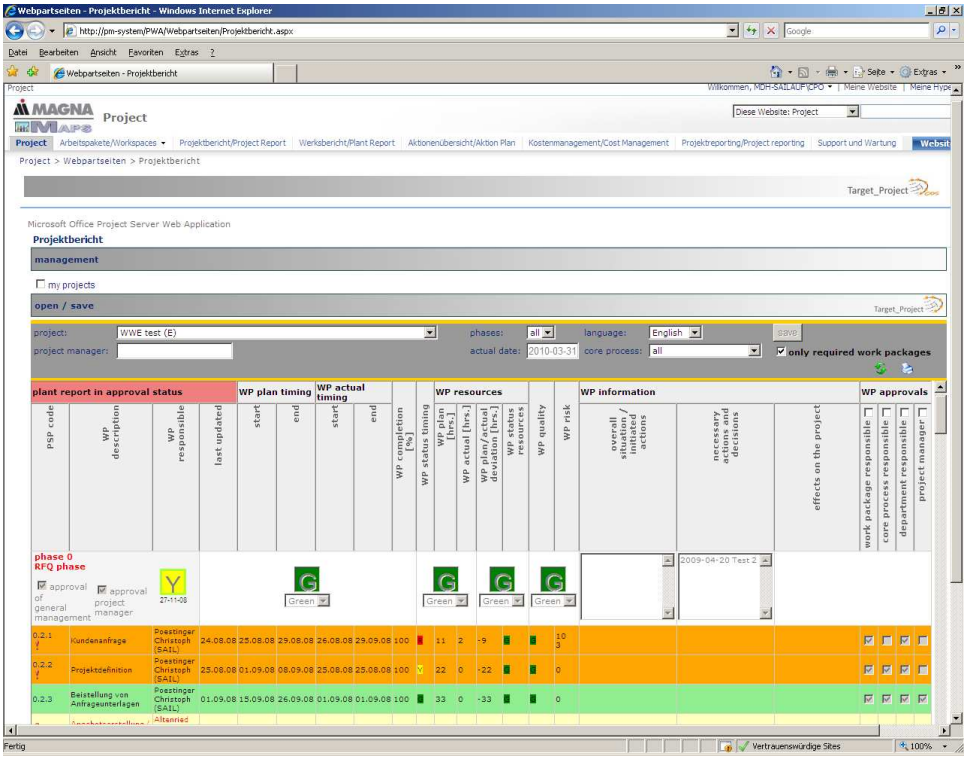


Fig. 5-10: MAPS Project Report (MAGNA (2009))

From this report, the work package report can be directly accessed via a direct link.

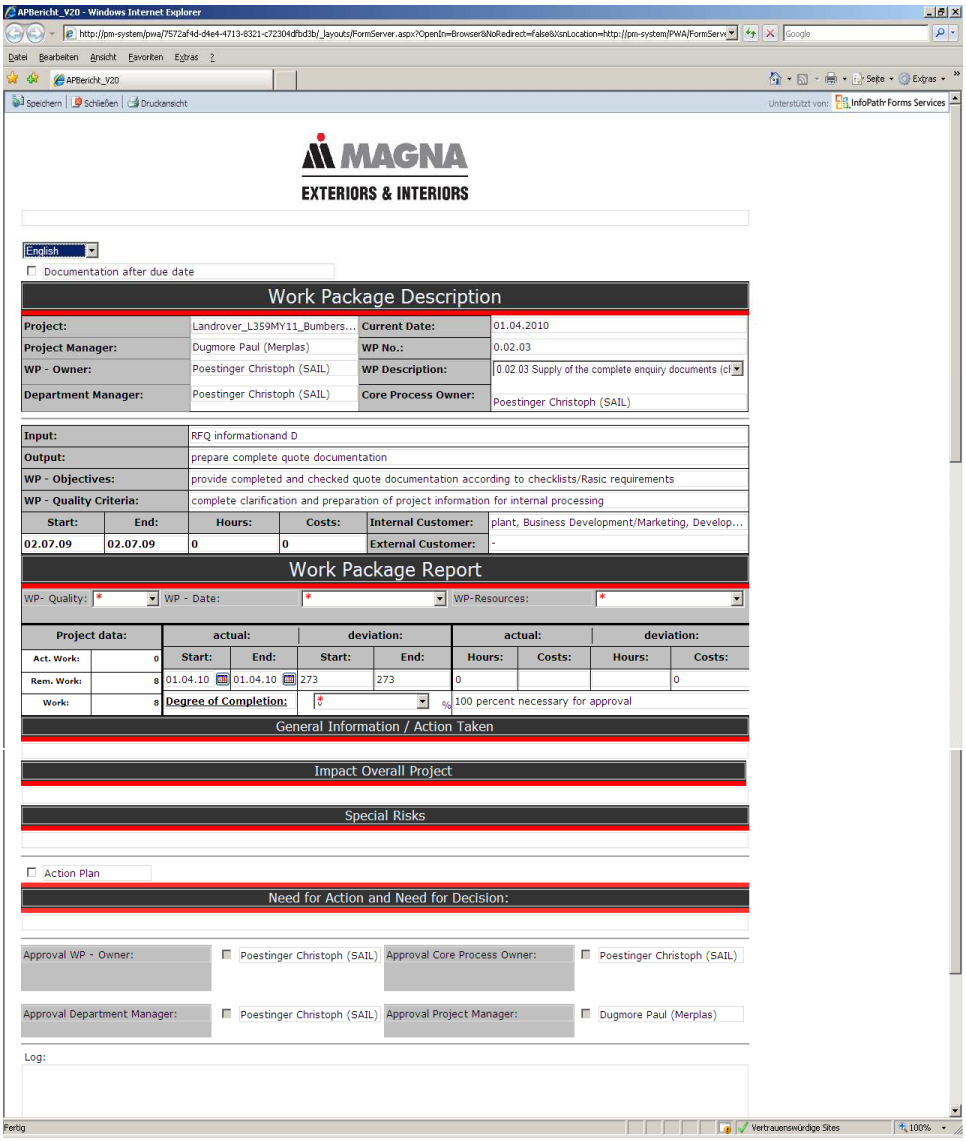


Fig. 5-11: MAPS Work Package Report (MAGNA (2009))

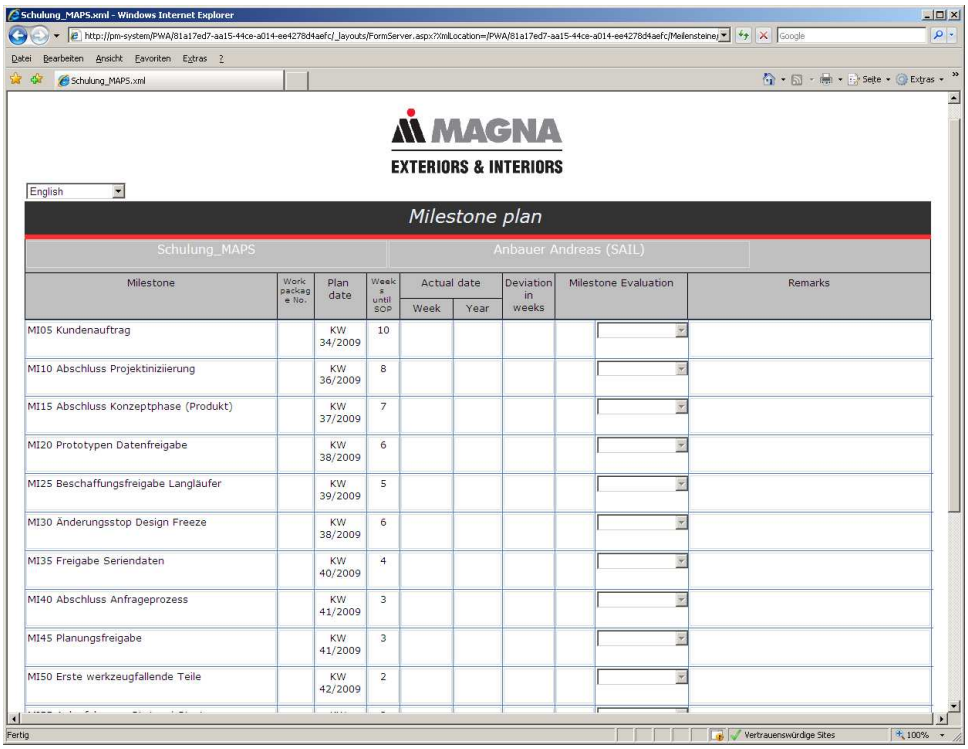
The work package consists of various tasks, defined in the RASIC, which are not shown here, but which are essential for completing a work package. Basic information which needs to be maintained is the status for:

- Quality
- Timing
- Resources
- Cost
- Level of completion.

Additional information regarding potential risks or necessary actions can also be entered here.

Important is that several approvals are necessary for closing off the work. This demonstrates that project work is spread over several resources.

Another central report is the Milestone Report that is usually shared with the customer and holds the key dates for all milestones, external as well as internal ones.



MAGNA
EXTERIORS & INTERIORS

English

Milestone plan

Schulung_MAPS | Anbauer Andreas (SAIL)

Milestone	Work package No.	Plan date	Weeks until SOP	Actual date		Deviation in weeks	Milestone Evaluation	Remarks
				Week	Year			
MI05 Kundenauftrag		KW 34/2009	10					
MI10 Abschluss Projektiniziierung		KW 36/2009	8					
MI15 Abschluss Konzeptphase (Produkt)		KW 37/2009	7					
MI20 Prototypen Datenfreigabe		KW 38/2009	6					
MI25 Beschaffungsfreigabe Langläufer		KW 39/2009	5					
MI30 Änderungsstop Design Freeze		KW 38/2009	6					
MI35 Freigabe Seriendaten		KW 40/2009	4					
MI40 Abschluss Anfrageprozess		KW 41/2009	3					
MI45 Planungsfreigabe		KW 41/2009	3					
MI50 Erste werkzeugfallende Teile		KW 42/2009	2					

Fig. 5-12: MAPS Milestone Report (MAGNA (2009))

Another consolidation, important for the top management, is a summary of the project status of all plants. The approval of each single plant report lies in the responsibility of the local general manager. This summary shows project key data (plant, customer, program, project name, product, project manager, average number of vehicles per year, SOP, EOP) as well as condensed information to all phases (quality, timing, resources, risk, cost). Additional information, such as dates of phase approvals, is available.

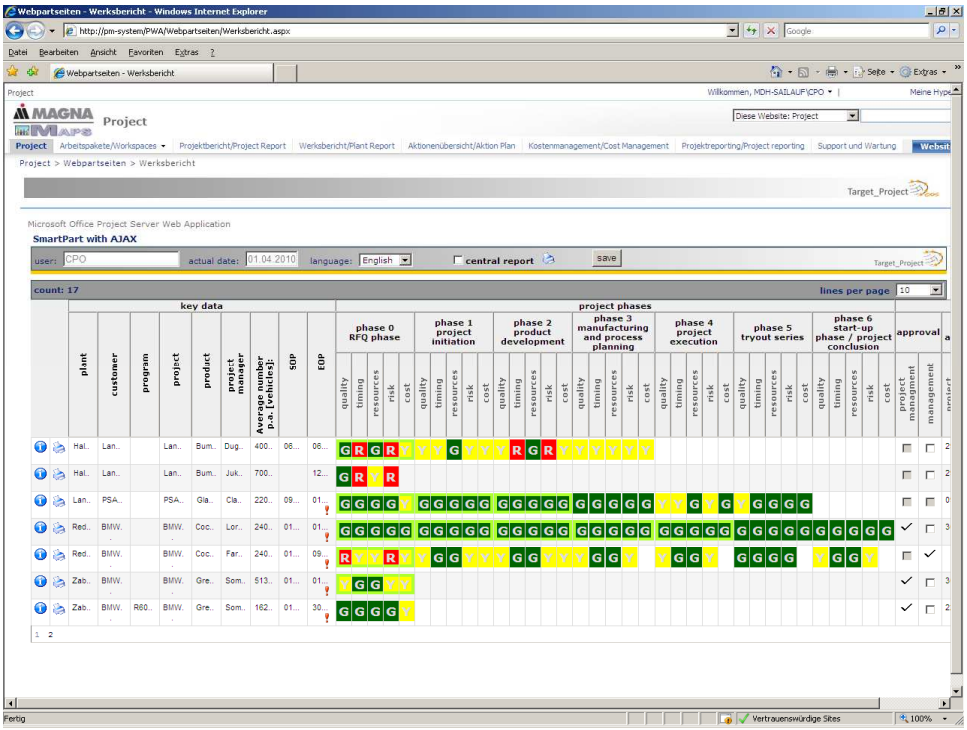


Fig. 5-13: MAPS Plant Report (MAGNA (2009))

The highest report with the least level of detail is the overall group report, showing all projects, with information to quality, timing, resources, risk and cost.

This is the base for regular reviews with the top executives.

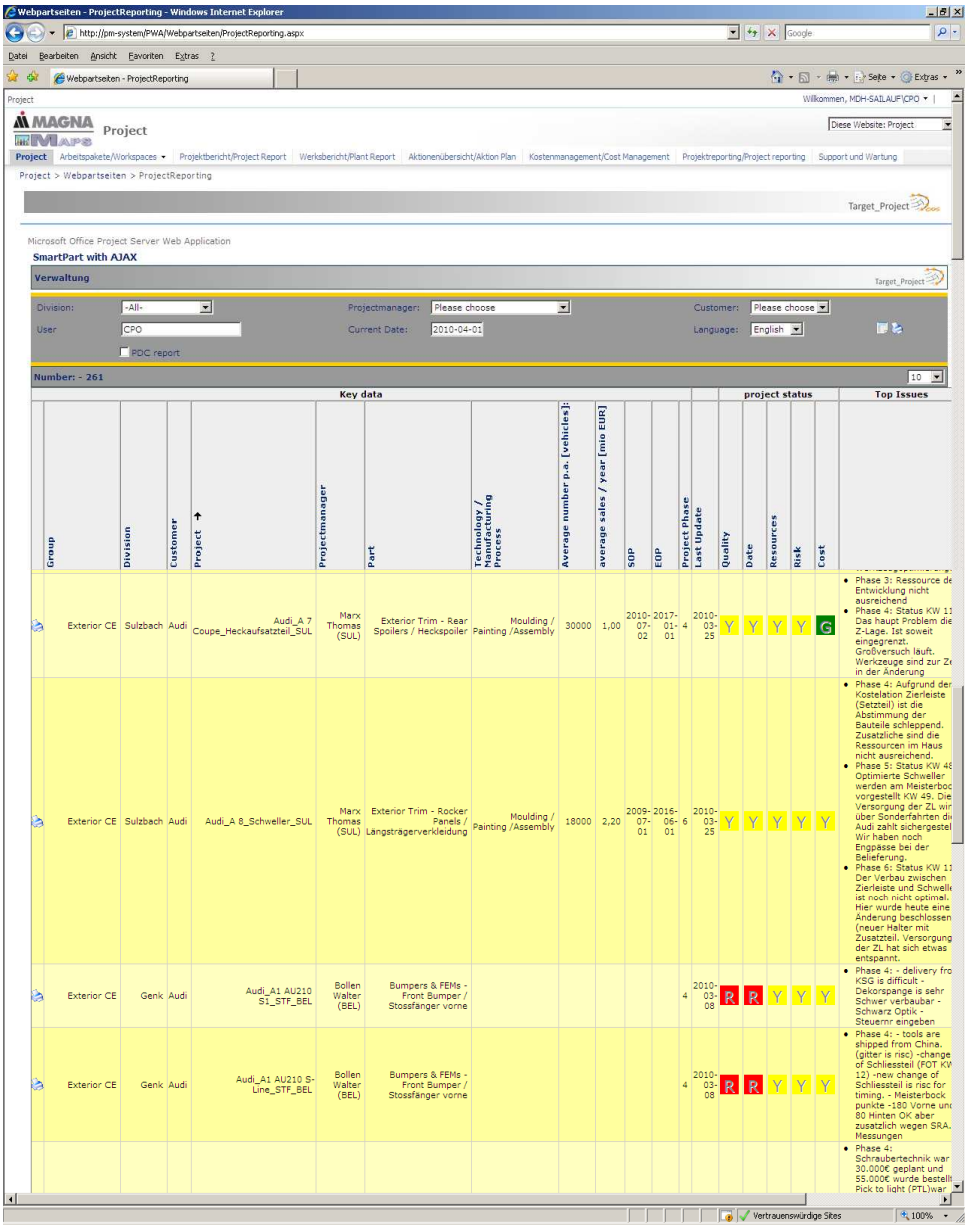


Fig. 5-14: MAPS Group Report (MAGNA (2009))

Usually it is up to the senior executives how they are reviewing the project status. If they are dedicated and eager to run through all 200 projects (including 150 green ones), or if they only want to review all the red ones, or - as usually done - discuss the “Top ten” projects only. It’s usually a top management decision.

One report that is also available and which is linked to all above reports is the cost report. This one needs additional approval by the local financial controller. This is to ensure that there is a common understanding of the financial status of the project.

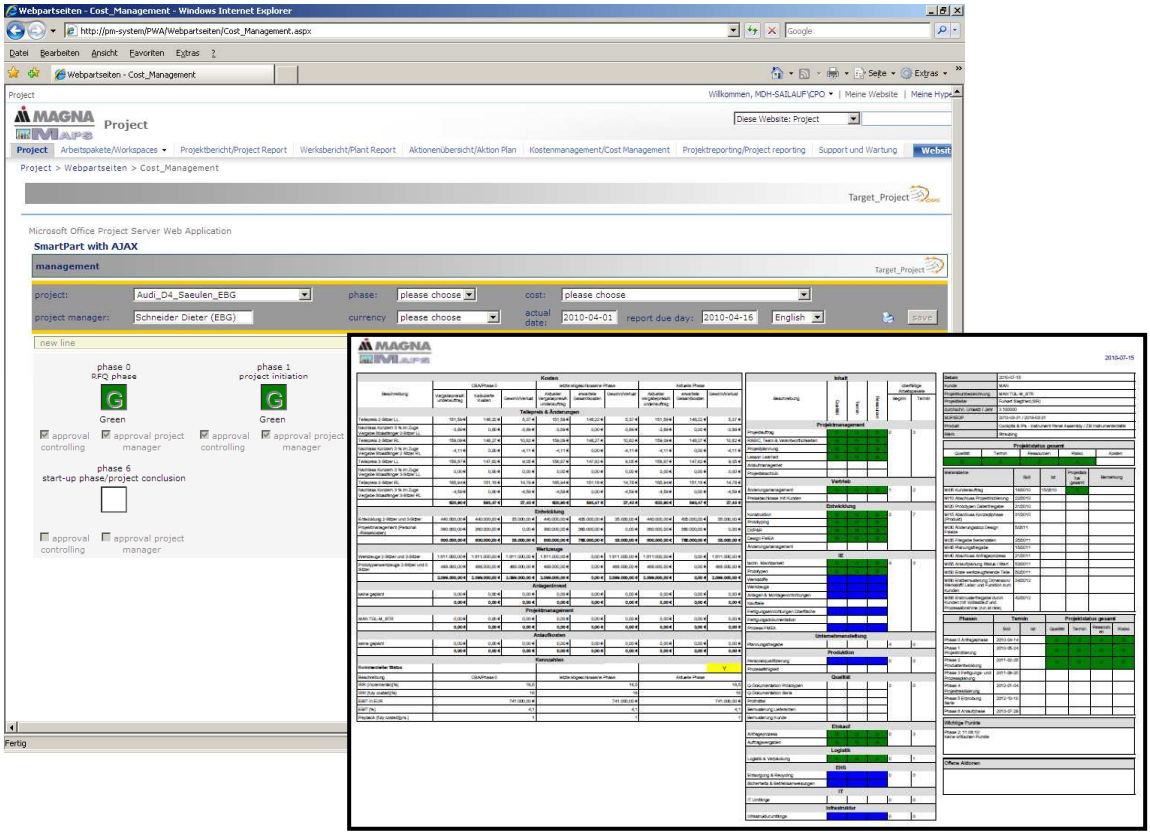


Fig. 5-15: MAPS Cost Report, Project One pager (MAGNA (2009))

It is of the highest importance that the financial information is linked very closely with the firm's financial standards and procedures. Wording, formats and appearance should be used which top executives are familiar with already. This is something project governance has to coordinate and to establish.

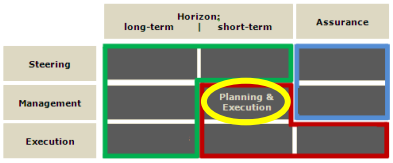
Generally the decision to work on a central server was good. This was the only way to collect cross-project information. This is necessary to realize resource shortages or other bottlenecks. Also, if the Sales Team would

overload specific divisions without knowing the technical capacities, this would be transparent in the system.

On the other side, it is not so easy for plants to store project data on a central server. This has something to do with technical issues (checking in, checking out, publishing,..) but it also has a lot to do with trust, as confidential data, such as financial figures are included. In summary it can be said that any system that deals with such an integral and complex topic does have some complexity. The goal was to limit this complexity and don't let the system become dominant.

5.5.2 Responsibilities for the Project Team

5.5.2.1 Planning & Execution

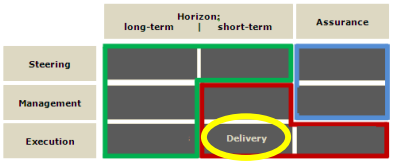


This section is the main playground of any project manager. Being responsible for a proper and solid project planning as well as the close controlling of a project are his main tasks. The main criteria that need to be planned and controlled are costs, quality, timing and resources. The project manager doesn't necessarily have to be an expert in all project relevant areas. He rather needs to have good organizational skills to act like a conductor of an orchestra. The right tracking tools and the right team members should enable him to focus on the very critical things. Therefore, his team members must be responsible for executing what is under their control independently, only escalating if additional support is needed. Work package descriptions and RASIC descriptions help the team to be aligned to the expected outputs.

Resource planning is always a critical issue. As MAGNA's system is set up on a central server, covering all projects, it is possible to plan and control the resources cross-group. This means that the project manager is not just able to see the resource allocation from team members in his particular project but also to see their allocation throughout all projects where they have any responsibilities.

When rolling out this section, not much confusion was expected. But, to be honest, the opposite was the case. The assumption that all project managers had detailed project management know-how in regards of planning, controlling and executing was just wrong. The major problems were conceptual misunderstandings, technical deficiencies or just ignorance. To overcome these, specific trainings were necessary. For example, Toyota driven plants were generally weaker in regards of MS Project capabilities, as Toyota doesn't like to work with MS Project and therefore educates its suppliers to use other tools. On the other side those plants had a better understanding of integrated project management work. The most important lessons learned during this phase was that assuming that only the most skilled project managers are employed could be very dangerous for any company. The approach during this rollout was to check, to openly communicate and convince and then to train and improve.

5.5.2.2 Delivery

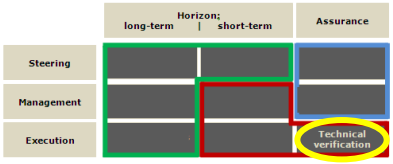


The deliverables are defined in the work package description. Each work package owner is in charge of delivering what is expected. Regular reporting gives the project manager a good estimation of how the work packages and the project mature. Reporting intervals of two weeks have been found suitable. They meet both requirements – early information of potential problems and limiting administrative effort.

The experience made during defining and rolling-out the deliverables was also quite interesting. Of course not just different forms and standards were used prior, but also the content was different. So in fact, the divisions were very interested in exchanging information about deliverables. Just by discussing these topics with the plants, the involved people already benefitted from it – without direct influence on project performance. This was a good example for the benefits that a PMO can bring.

In the end the plants could still use most of their existing forms. This was important for them not to lose their well-established documents. It was only mandatory that they specify the linked documents to each work package – for documentation and for auditing reasons.

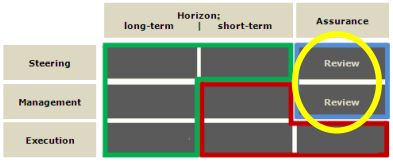
5.5.2.3 Technical Verification



The most efficient way is that every work package responsible verifies the result of the work package himself. They should not just do the actual work but also allocate enough time to ensure the results.

The verification of the overall project maturation can be done by review teams. But the technical verification of the micro work packages should stay with the responsible persons. As defined through MAGNA's culture, no one else will be accountable for the work packages except the work package responsible person. Thus it is him who has to validate and verify the results of the respective work package.

5.5.3 Responsibilities for the Review Team



Auditing is a complementary while independent and objective assurance and consulting activity designed to add value to and improve an organization's operation. The main audit/review focus rests on the reliability of financial reporting, the effectiveness and efficiency of operations, and compliance with applicable laws and regulations (Renz (2007), p.206).

MAGNA didn't have an independent review team so far. But to benefit from standard requirements and to initiate cross-plant information transfer, it has been decided to install this body. Therefore, based on the actual outcome of

the research, top management announced the introduction of a PMO in our organization. Besides other duties the PMO also takes care of the reviews. Its main task is to verify and ensure that the project proceeds along the budgeted figures.

This team is on a tight schedule to review each project at least 3 times. At those reviews the review team is empowered to officially approve the status which makes the project team to proceed further. During the reviews the project team has to show the solid maturation of the project. Status for timing, quality, cost and resources are discussed. In case of any deviations action plans, that are cross-functionally approved, are checked as well.

Major focus is to verify that the project teams work result-oriented. Not just doing the work, but having the results ready when expected is the key. Thus the review team checks that each work package has a result document attached. For example this can be a .pdf of the planned plant layout or of the project organizational chart. Detailed information needs to be present at the company project folder at all times. In addition to these official reviews there should be local reviews at higher frequencies. Studies show that a higher review frequency, such as four reviews per month, has a positive effect to the project maturation (Bullinger, Kiss-Preußinger, Spath, Fraunhofer (2003), p.32).

The main idea is to give the project team a space to reflect on the current situation and to discuss any issues. Sometimes this is already enough to detect root causes and define action plans. Sometimes the problems cannot be solved solely by the team and thus need to be escalated to the project sponsor or other stakeholders.

But not just hard facts are on the agenda. Also soft issues such as working atmosphere, inner/outer noise or communication issues are part of the meeting. Particular in this area the art of conducting efficient and effective reviews is generally very important in order to gather sufficient information from the team. Usually this information triggers action which needs to be coordinated and agreed on. Even though the basis of these reviews should be partnership, it is necessary that there is no doubt about the power of the review team. Working with recommendations only will not bring the desired output. But it should never be forgotten that outcome should be solid action plans and not blaming.

At the beginning it was difficult because the plants didn't want to show too many problems. They feared that the review team would escalate everything right away. But as time passed the trust between the involved parties got bigger and finally the review team is well accepted, giving the plants the appropriate support if needed. These meetings are sufficient for the review team to get a good impression about the individual skills of the people too.

In addition to that, the review team also visits individual plants to do system audits to ensure that the plants follow the processes and standards accordingly.

Review reports and audit reports need to be communicated to the executives. Some argue that top management should be present at the reviews. This is absolutely true and would increase the efficiency, especially in regards to decision making. Unfortunately the reality shows differently. Top managers, such as CEOs, a.o. do rarely find time to discuss project issues with their project teams. Fast changing meeting schedules, extensive travelling and other duties make it almost impossible to attend those reviews. In fact, as the interviews showed, in most cases the top managers don't even know the project teams. In my case at MAGNA, the president would have to review roughly 200 projects. Just from a logistical perspective this is not feasible at all. One option would be to install a body that is taking care of the project reviews. This could be done by an audit group or a PMO. At MAGNA a PMO has been founded to review the project status and to direct the communication.

5.6 Roles in MAGNA Project Government

The reason for different project roles and their respective descriptions can be found in vast literature regarding project management.

The most important reason however is the loss in efficiency and the remaining uncertainty if tasks, competencies and responsibilities are not specified. This issue is regularly one of the most important one when efficiencies of project organizations are being reviewed.

The following chapters will summarise very briefly what has been categorized as important for an effective project governance of a multi-national company.

5.6.1 Board of Directors

As company structures can be very different and complex, there is no rule how the competencies should be defined. Very often the competencies with regards to project management standards are with the directors that are located in a holding. In this case it is quite clear 'who makes the rules'.

Sometime it is not so clear, if for example, the whole P&L-responsibility as well as project responsibility lies with the local GMs. Enforcing standards can then be very difficult. But especially in these cases, it is even more important to define the project management tasks and competencies. Written agreements of all involved managers/general managers will remind them later on of their duties.

Nevertheless, some of the key questions that the board of directors has to answer are:

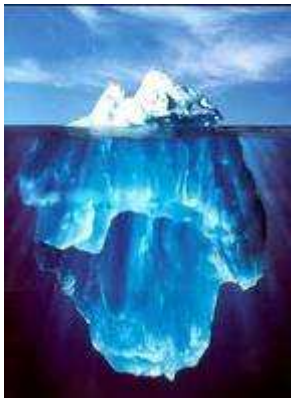
Should project management be done:

a. on the side, with limited resources?
b. by external project managers?
c. by full-time professionals employed by the company?

These decisions are of course part of the overall strategy. It is furthermore important that the roles, skills and experience levels as well as the authorities and accountabilities of the managers need to be defined (Müller (2009), p.18).

Another issue that needs to be looked from top management is the remuneration for project relevant work. It sounds obvious that this is linked to the bonuses of managers anyway. Fact is that very often general managers have their targets not linked to projects. This is why, for example, SG&A costs are kept low, resulting in lack of good and sufficient project resources. The linkage between line staff and projects must be coordinated well. In the research this was identified as a crucial topic. While projects itself are there to establish a beneficial change to the organization, the line staff usually is resistant against changes. The best way to manage this area of potential conflict is to ensure that it is governed through careful preparation of the permanent organization for the upcoming change, preferably supported by an appropriate incentive system (Müller (2009), p.74).

All these issues need to be solved from a top management point of view. Mutual understanding needs to be the basis for that. The awareness of organizational issues is extremely important for the upper management. This is not just important for any organization per se but also for project environments. The explicit dimension of an organization, which is observed as the *structure*, is by far smaller than the implicit factors that assemble the *culture*.



Structure(s)
Regulations, rules, directives, handbooks, definitions,…

Culture
Behavior, myths, stories, ‚company slang‘, collective expectations, values, norms, attitudes,…

Fig. 5-16: The organization as an ‘iceberg’ (Rüegg-Stürm (2005), p.47)

Finally one observation made during this study was, that it is regularly underestimated how much the behavior of top executives - in either way - influences the projects. If the upper management works together well in an organized and structured manner, the likelihood that the projects will do the same is quite high. Reverse, a ‘Laissez-faire’-approach can be a big risk for some organizations and projects. Integrity must come from the top-down.

5.6.2 Sponsors and Steering Groups

Sponsors and Steering Committees are usually located in the area of top management, either on a corporate level or on a plant level.

They usually have got a difficult task. They must function as a bridge between the project team and the rest of the organization. Typically sponsors focus on one of these areas but are not always able to operate in both areas equally. Micro-managing the projects or being not involved in the projects at all can be the results.

Regardless of the above mentioned difficulties, one main task for them is to stick to their duties and obligations. It sounds simple but shifting project

meeting dates or review meetings is something that is very common in many companies. The result can be disastrous if steering committees are not able to stick to a handful of meetings to support the project team. Discipline vanishes, negative working atmosphere increases, information flows dissipate and decisions are procrastinated. Project work is put on many shoulders. This is also true for top executives and steering bodies.

Looking at the situation at MAGNA, there was also some uncertainty in regards to the composition of the governing boards. It was not clear in all cases if things needed to be escalated to the steering boards, which were composed of plant managers, or if it needed to be brought to the attention of MAGNAs top managers (directors, vice presidents,…). Usually things were solved in the end. The remaining questions were: Was it done effectively? Was it done on time?

The composition of the boards looked somewhat the same. Headed by a CEO/GM and accompanied by others (VPs/directors/heads of departments) representing functional areas such as engineering, quality, sales and others.

Main questions that need to be answered are:

- Who will sign the internal project order?
- Who will sign the contracts?
- Who will be responsible for providing the right quality and number of project members?
- Who will do project reviews (if there is nothing like a review team or a project management office)?
- Who is in the approval processes for capital expenditure (CAPEX), Invest,…?
- How are the escalation routines? This for example is not just important for the internal staff but also important to know for the customer, especially in a multi-national or even global context.
- How can remuneration improve the results of projects?
- Who will assign the project manager and will be responsible for the succession planning?
- Is the organizational structure effective and appropriate?

These questions need to be asked either on a local or executive level, depending on the size and scope of the project. To all these questions there

is no golden rule, but they have to be clear for everyone prior the start of the project.

5.6.3 Project-, Program-, Portfolio-Management

The project team is in control of the project and can manage (under the governance team's guidance) and deliver the planned results. However, it is not in control of the business and, therefore, cannot deliver the business results without the assistance of the business through the governance team (Subramanian (2009)).

A key function within the project team has of course the project manager. He basically must always know what is going on in the project. As there is so much published regarding the role description of a project manager, I will not go into detail here but only focus on additional automotive and multi-national aspects.

A project manager has to lead the project team. He must have good technical, organizational and soft skills. Unfortunately, particular in automotive, it happens very often that project managers have their background in technical, industrial areas. Sometimes this leads to project managers that get stuck in technical details, losing the big picture of the project. Not every good technician is a good project manager. Trusting and relying on the people in charge lets him focus on the really important things. This is a key success factor for every project manager. Also technical project managers sometimes find it difficult to keep close track of the project costs. This argument doesn't mean that project managers shouldn't have a technical background at all, but that is just something that should not be overlooked when assigning someone for this role. Besides being familiar with the technical context and processes, a project manager needs to be equipped with a set of problem solving tools. Most of them are standard in automotive anyway such as FMEA, 8D, DMU, PDCA, LOP, and others.

It goes without saying that project managers need to have a good understanding of the overall development of a vehicle and the interdependencies of various functions.

Having an active internal communication role is extremely important within multi-national projects. Good social and ethno-social skills are also necessary to help finding common solutions within the team and to get out the best of everyone.

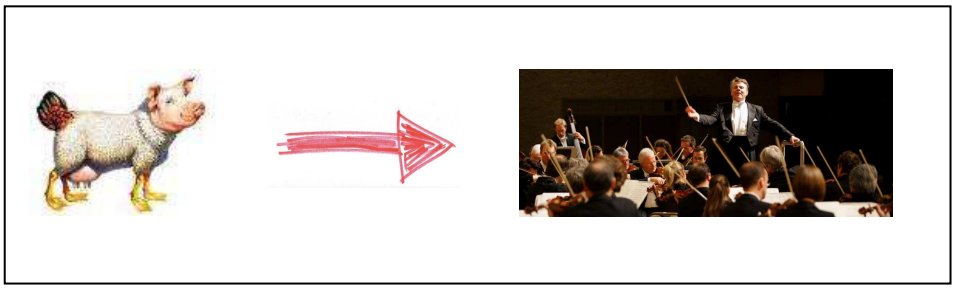


Fig. 5-17: From "All singing, all dancing" to leading a team [7]

Especially in multi-national projects it is very valuable, to know the different cultures and their conventions. Thinking out of the box, letting everyone express the way they are used and accepting different points of view, is important and will contribute to positive results.

These skills are more important than typical technicians would consider. Conventional project management literature says that the project team should consist of various skills and characters. In reality an automotive project manager can very seldom choose his team members. Finding the best way to work with different personalities in a professional and constructive way is therefore extremely important.

Often the terms 'project manager' and 'program manager' are not clear and misused. In MAGNA the distinction of a project and a program is the following one:

- A program consists of several single projects
- Each project is representing a product that is ordered by the customer (usually in a bundle)
- More than 2 individual plants are involved
- There is a program budget comprised of individual project budgets
- The customer requires a single point of contact for the program
- Sometimes all parts are delivered out of one plant (assembly of modules)
- Complex interfaces between customer, plant, suppliers,…
- Strategic reasons with high risk involved
- Global responsibilities

[7] Poestinger 2010, own illustration (Pictures: http://1.bp.blogspot.com/_aS0AQE0_u_4/TFRNW-CnP6I/AAAAAAAAABc/CS1xV5pbEx8/s320/eierlegendewollmilchsau.jpg, http://www.weta.org/fmblog/?p=506)

Sometimes there is almost no distinction between program and portfolio management. Naming can vary from case to case, from company to company, from industry to industry.

Finally, the author wants to stress once more that working according to various check lists and procedures is by far not enough to be a good project manager. Check lists and procedures can only help to support the overall project management. A pilot will not be able to steer a plane just by using check lists. It is by far more important to have a common understanding about the underlying principles and objectives. This is the area where investment will pay off very easily.

The findings about an optimal "project per project manager" – Ratio was completely in line with the study from Bullinger (Bullinger, Kiss-Preußinger, Spath, Fraunhofer (2003), p.37). At a ratio of 3 to 4 projects per project manager the risk of failed projects, gets significantly higher. Also, the commitment for each project decreases while the administrative, organizational, usually non-value-add effort increases.

5.6.4 Project Management Office

Some companies bundle all project governance issues within a separate organization called project management office (PMO). A PMO can play a very important role within a project governance framework. This institution will then take care of prioritizing and aligning projects to the strategy, designing and defining standards, developing and providing the right tools, reviewing project status, evaluating project work,…

Core task is to ensure an environment that supports and assists front-loading in project. This is essential for a stable, successful project management.

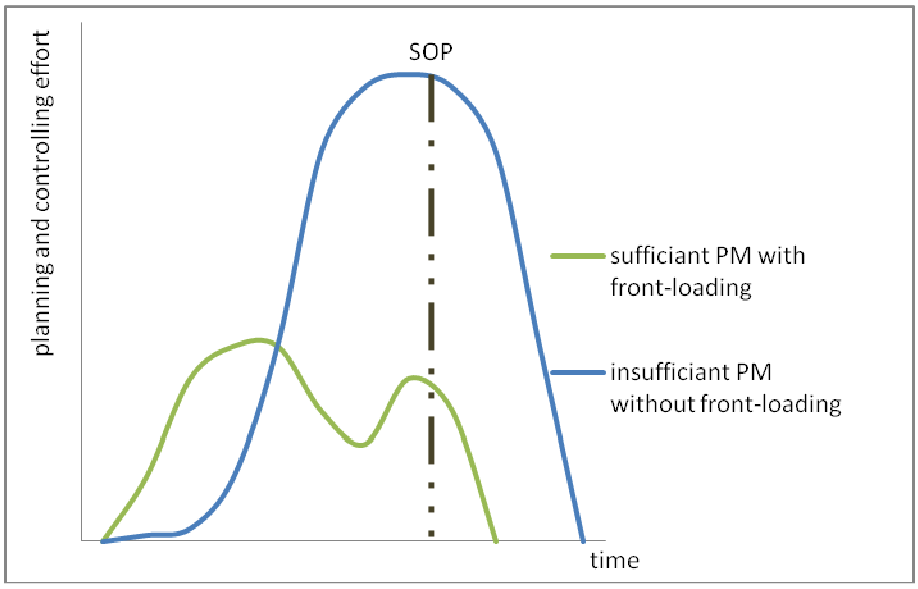


Fig. 5-18: Front-loading (Wolf/Mlekusch/Hab (2006), p.7)

A systemic front-loading results in smoother launches, less changes, less troubleshooting, higher product maturation at SOP, shorter development time and met budgets.

A PMO furthermore is a link between the projects and the rest of the company particular the top management. It also has a good insight in the quality of project management. Due to the number of different projects, it has a good understanding of the strengths and weaknesses of the underlying procedures.

Here is a set of duties of a PMO (Hanford (2004)):

- Program office management
- Resources coordination
- Budget administration and procurement
- Risk assessment
- Work products tracking and review
- Facility administration
- Contracts administration
- Technical support liaison
- Training coordination
- Methodology and process support
- Issues management

- Communications management
- Status reporting management

Of course this is not set in stone. There are many different descriptions and definitions available. A PMO can be defined by each company individually depending on the firm's structure and business.

During this research project it has also been proposed to install a project management office within MAGNA Exteriors & Interiors reporting directly to the president. This office has then been implemented, taking care of all cross-group relevant project issues.
It covers the following areas:

- Projects (to ensure solid project starts)
- Launches (to realize smooth launches)
- Change Management (to have effective and profitable change processes)
- Improvements & Standards (to define group-wide standards and to materialize from improvements)

In addition, controlling is supporting all these areas.

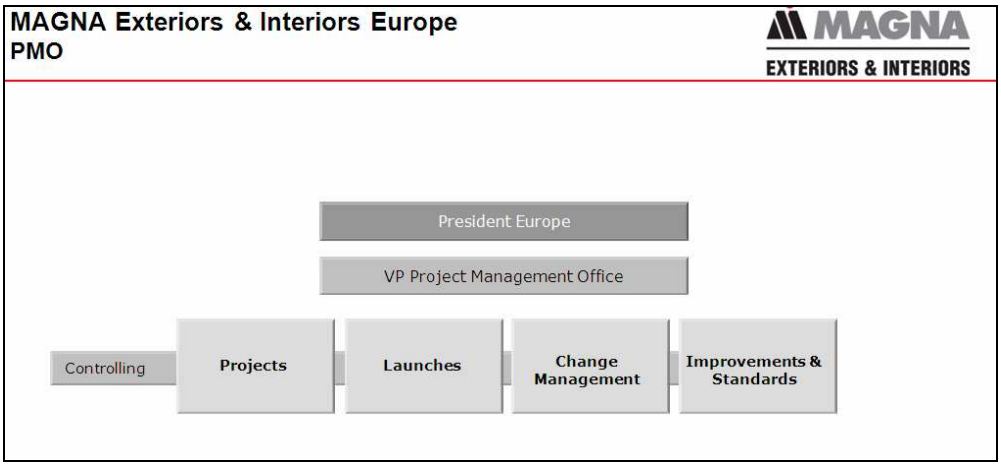


Fig. 5-19: PMO Organizational Chart[8]

But one thing must not be forgotten: accountability cannot be delegated to any kind of office. While a PMO can help in getting standards across the group, the top management must still take care of its responsibilities. Decisions must still be taken by the top representatives on time. If a firm

[8] Poestinger 2010, own illustration

exists of many decentralized subsidiaries or companies, where each of them is looking for its best fate, then a PMO can be extremely helpful by aligning them with the company strategy. Projects can be assigned to specific plants, prioritized or neglected through the PMO. Costs of additional organizations, such as a PMO, will always be a discussion issue. But once a company experiences one or two bad launches, it will be happy to investigate this option. But multi-national companies have to consider more than just the set up costs. Maintaining and improving the system will also bring additional costs. Each company has to decide if this effort minimizes the risk sufficiently and therefore ultimately lowers the overall costs.

Again, there is a lot of additional literature available about the setting up of a project management office. So therefore I will not elaborate on this topic further.

5.7 Accompanying success factors

There are still some more issues that need higher management focus. They are outlined in brief in the next chapters.

5.7.1 Delegation

As described further above, having standards established and implemented, or even having a PMO in place, doesn't take accountability of the top management away. Role descriptions help to define and assign tasks. But relying completely on others and hoping that everything will turn out OK is obviously not a successful and right approach. In the end, top management needs to be aware that shifting responsibility doesn't shift away their accountability. They need to have the right approach and seniority to lead a successful company. Too much of 'laissez faire' could put a complete organization at risk.

5.7.2 Communication

Since usually multi-national automotive companies employ many people, sometimes up to the 10.000's, the right level of information is crucial.

The importance of right information within and out of the project team needs not to be underestimated. Some information can be transferred in simple newsletters, other information, such as financial figures are highly confidential. For some, such as best practice transfers, it makes sense to

have regular meetings on site. Needless to say that information and communication with the top management has top priority.

Particular in international teams, cultural differences must be considered. Also difficulties resulting from time differences, languages, conventions, organizations must be considered and well planned.

Fig. 5-20: Cultural diversity [9]

In the automotive world working across different cultures is a daily reality. Being opportunistic and assign a project manager to be the interface to many cultures can work. But the governing bodies should be aware of the big risk this approach brings. Openness and the acceptance for cultural differences in order to reduce the cultural blindness is extremely important (Renz (2007), p.83).

Project relevant information, such as possible customer complaints, should be communicated as early, but also as structured as possible. This can be done via e-mail distribution lists. But again it is necessary to think of “who should be able to send what type of information to the top management”.

One common problem arises when formal and structured communication is being replaced by an informal and infrequent one. This is sometimes done during project reviews, unscheduled meetings or undocumented phone calls. The chances that the objectives get unaligned are quite high. Consequently the project manager loses sight of what the steering group really wants. Often this leads to failing projects or replaced project managers.

[9] https://www.estss.org/uploads/2010/11/VertrueCulturalDiversity-300x300.jpg

5.7.3 Change Management

Change Management will not be discussed in detail here. There is outstanding literature available.

Also this research revealed that there is enormous potential within MAGNA in the area of Change Management. While everyone talks about Change Management, the truth is that it is rarely handled the appropriate way. Very often projects are taken on for strategic reasons only, hardly meeting the internal financial requirements. In the beginning everyone knows that there must be solid Change Management in order to increase the profitability of the project. But in the course of the projects, the focus on Change Management diminishes for various reasons. Know how is missing, the organization is not supporting, project managers are overloaded or setting up an efficient Change Management process just costs too much. Also late information regarding change request coming from the customer doesn't really help. But even if the project is extremely profitable, there are hundreds, or even thousands, of changes that must be followed closely as they have big influences in many areas (materials, manufacturing technology, assembly procedures and so on).

An efficient process becomes even more important when different plants are involved. Internet based processes and platforms can be a solution. "Excel islands" usually will not work in such cases any longer. Due to the complexity, successful Change Management cannot be done by one person only. Teams representing various departments or Change Boards are a useful setup.

To improve the situation at MAGNA, the PMO has been assigned the task in setting up and rolling out a standard process. It is needless to mention that this task is an organizational project itself.

5.7.4 Incentive models

Line managers usually have defined career paths. Available trainings help them to proceed further. For project managers it is sometimes very different.

Besides not having the right support and esteem in the company, they are very often not equipped with adequate training. Stepping up is also difficult and so they stay project managers for very long times.

Part of project governance must also be, to make sure that the project managers are getting the right appreciation. Finding and attracting good project managers will be more expensive than keeping the good ones within

the company. Therefore an institution like a PMO can track the career paths and provide additional trainings for them.

Part of the project manager's remuneration should be linked directly to the project results. It should be very clear from the start that his project performance directly determines the yearly bonus.

But it should be underlined once more that general managers need also to have the project KPIs linked to their targets. Supported by a PMO they must steadily try to improve the local project management. Linking the improvement to their remuneration is sometimes the only way for them to have the right focus. Overall, an incentive model should reward managers and leaders for their progressive approach and thinking out of the box. As mentioned above the line managers should also be rewarded for supporting the successful realization of projects. On the other hand project managers should also not just be rewarded for their pure project work but also for their contribution to bring these changes into the permanent organization.

At MAGNA, the above approach is not implemented. In principle the top management supports the idea of linking project success to the yearly bonus of general managers. But in reality this seems to be quite a difficult endeavor as in MAGNA general managers work quite autonomous. But looking at the current trends it will only be a matter of time until this approach will be implemented.

5.7.5 Career Path for project managers

In most of the interviews it has been stated that there is a lack of defined career paths for project managers. Everyone is aware of the importance of a solid project management and skilled project managers. But improving their skills as well as giving incentives to others to become project managers is very often not done. Sometimes project managers are sent to standard project management seminars where the effectiveness and the usability must be questioned. Also equipping a project manager with tools and ideas and sending him back in an environment where he is not supported in the right way, will also not help.

As a lessons learned from this research, MAGNA started a career plan for project managers. First, the number of project managers including their background and skills were determined. Secondly a very specific modular

training has been defined. Unique was the strict focus on automotive relevance, tools and standards.

Fig. 5-21: MAGNA Project Manager Automotive[10]

It has been also planned that in these courses a lessons learned and information sharing of different divisions will take place. Just discussing the individual experiences, different needs from different customers and local histories will already bring a better understanding down to the project teams. Within the divisions, awareness initiatives will also help to increase the understanding and importance of project work. Those campaigns should also help to inspire others to become project managers. Project management trainings will not be restricted to project teams, but line managers will also take part in these trainings to change the approach towards project management from the bottom up.

For MAGNA it is important to make the job requirements very clear. Not everyone will be able to become a good project manager. Usually the stress

[10] Poestinger 2010, own illustration

level for project managers is significantly higher working under many constraints such as meeting deadlines, not overspending budgets and being equipped with too few resources. In some very well-known OEMs a hierarchical jump for management is only possible with sufficient project experience. This means that almost all of the executive managers had to be part of a project beforehand. This is the cultural approach that the initiatives that has been started should also bring to MAGNA. But of course this will only work if demanded and supported from top management. Nevertheless, it became obvious that, like in so many other companies too, human potential is wasted. But now there is a clear commitment to get this changed. Also the retirement of experienced project managers can be a problem for a company, as the missing knowledge must be recouped by external, expensive, resources. Unfortunately the last year has accelerated this process, as many automotive companies got rid of older employees due to cost cutting activities.

6 Personal conclusion and lessons learned

The first important conclusion was that, regardless of the business the top management was responsible for, every interviewed manager had the same requirements to a project management and therefore all supported the institutionalization of project governance. They all had the same problems in daily life, no matter if it was the automotive, the railway or the telecommunications industry. Their main goal was “getting the right and relevant information throughout a widespread organization and making sure that the right people are in charge working with the optimal, not the best, processes and tools and where everyone knows exactly what is expected to minimize overhead and inefficiencies.”

The project “setting up a project framework within a multi-national company” showed extremely well, why this task is so much more demanding than setting up a local project management. Just the number of different players with different objectives and agendas show how important it is to have governance structures in place that cover the whole organization as an umbrella.

It sounds simple but if not equipped with sufficient resources and with adequate top management support, the endeavour of implementing such a system will almost be impossible. The approach that has been taken was to get all the commitments from the top managers beforehand. Then the tools and processes were designed in a bottom-up approach, having various project teams involved to make sure to define user-friendly procedures.

At the same time it is vital to be aligned with IT at all times in order to have an IT infrastructure installed that fits all needs. Having regular champions included, representing functional areas or plants, was also extremely important in order to calibrate, update and modify certain procedures and to get wide acceptance.

Communication with other MAGNA groups was also important to avoid double efforts and materialize from possible synergies. Last but not least marketing within and throughout the whole business group was essential for a successful roll-out too.

Currently the roll-out is not completely finished, but the most important tasks have been completed. Standardizing PSP, RASIC, setting up the tools to support the processes, releasing a project management handbook, support for the division with trainings and reviews and finally setting up a PMO to overlook everything has been successfully finished.

One open issue is that during the roll-out many projects, which already had been started, didn't have to follow the process completely, as it made no sense in re-documenting everything that had been done already. So it needs some extra effort to track the completion of those 'light"-projects and to make sure that all new ones follow the defined processes.

Generally working together with the divisions, providing help and support has proven to be the better way than imposing new processes and tools on them, but this also meant sometimes to change company cultures to the better.

It is still difficult to get the support from all line managers in all locations. The defined process should level the project load on many shoulders, but in order to be effective, everyone has to take portion of the work. Reluctant company employees can slow down or even halt this process.

Very interesting was the experience with one particular plant. Rolling out the ideas originally was extremely difficult. Many reasons had been found why the new processes and tools didn't make sense and couldn't be followed. They got some leeway with a wider implementation window in order not to lose them completely. During the course of time they had been awarded additional business and also had to take over projects from other plants as well. Suddenly they had the same problems, which the executive top management had before – efficient controlling and reporting, standardizing work packages,…

Looking then from this new position made them change their mind completely and implement the governance structures without restrictions.

One of the best discoveries was that having standardized PSPs, with additional work package definitions in the RASICs, cleared up many problems within the divisions. Very often it was unclear for them as well who should actually be responsible for doing what. So they were forced to sit together and specify responsibilities internally with all involved functions and departments. At the end everyone was extremely happy that things had been cleared up.

Another extremely positive discovery was that new team members and employees found it a lot easier to start project work where all work packages, including the content and the expected results, had been specified. Generally speaking, a structure enables one to “define suitable division of labour [… and to] coordinate intermediate outputs […] so that they can be integrated effectively into the greater whole.” (Renz (2007), p.97). Once understood by the teams in the division, the acceptance of structure in organizations and processes increased significantly.

One event which was not foreseen was the financial crisis which affected the automotive industry heavily. To minimize cost, the divisions were forced to reduce labor cost. These reductions didn’t only hit direct workers but overhead (Selling, General and Administrative Expenses (SG&A)) as well. This meant that also project team members had been released. This was particular difficult as the project governance was right in the middle of implementation. But not just in this regard this proved to be not the best idea. Having ever fewer project resources, some of them working reduced hours, put some projects, and therefore some divisions, at risk. Particular now, as volumes go up again, some of these project managers are irretrievably lost.

What also needs to be improved are lessons learned. As a first step there are now obliged work packages at each phase which require lessons learned-meetings.

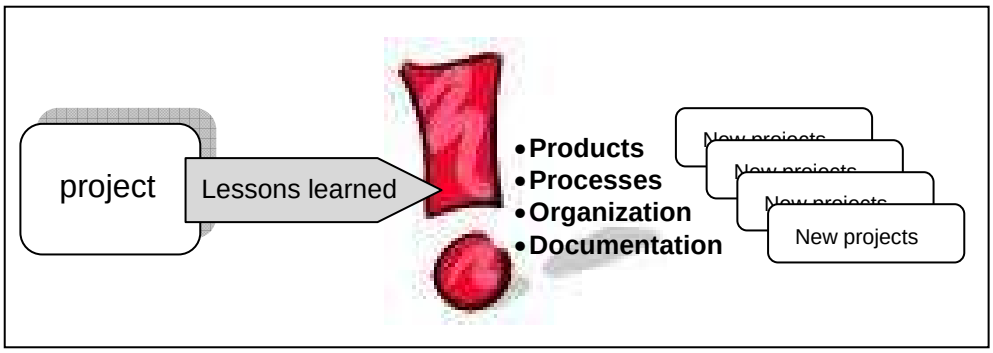


Fig. 6-1: Lessons learned[11]

But even within one plant it is difficult to really bring all the findings into the new starting projects. Documenting the lessons learned by filling databases is one thing but to really have all the issues included in the new projects is a wholly different story. And it even gets worse when there needs to be cross-

[11] Poestinger 2010, own illustration

group information sharing to avoid doing the same mistake to the same customer twice. The only practicable way is that the PMO helps to facilitate these lessons learned and tries to transfer the findings to other locations as well. In addition there should always be a mentor being part in one of the first kick-offs to bring the findings down to the new project team members. This mentor could be an experienced project manager coming from a former project.

Interestingly also the status colors needed to be defined as there was a different understanding from green, yellow (amber) and red.

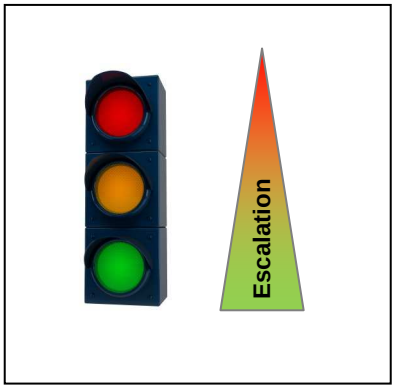


Fig. 6-2: Project status, Escalation [12]

Green was quite clear meaning that the project or work package is on track and all objectives and deliverables will be met.

Yellow basically meant that there are problems regarding the planned results but there is an action plan in place. But what exactly does this mean 'action plan in place'? Does that mean that the action plan has already been verified and is proven to work? Does that mean that the action plan has already been agreed on? Does that mean that it has been agreed on cross-functionally? Has it been implemented already? Such simple issues had to be discussed and specified. In the end it was necessary to have the same understanding.

Finally, implementing project governance was absolutely necessary and the right thing to do. It gives the top management assurance that all their employees work in the expected direction, supporting project management which brings the business of tomorrow. But besides the technical introduction one may never forget that there are other factors as well that should not be forgotten. As this is very much an organizational change some people need to change their behavior. Some start immediately looking for

[12] Poestinger 2010, own illustration

their benefits. Some do have hidden agendas and some are just not able to follow the new guidelines. Managing these issues in a professional way is extremely important.

During this roll-out the organizational structure of MAGNA changed. Due to the new installed global alignment, some responsibilities needed to be reassessed and modified. In this particular group, more responsibility shifted back to Canada where MAGNA's headquarter is located. Together with this shift it has been announced that the role of a general manager will be even more strengthened. He will ultimately be the only one accountable for what the plant delivers. In other words, influence of centralized departments might decrease. This of course could question the right to exist for bodies like a PMO. On the other hand due to the trend to have one face to the customer – on a global base – there is not much of an option as to be aligned and coordinated at the project level too.

7 Outlook

From looking in the past and at the current trends, it is obvious that project governance will become increasingly important. Derived from general governance, which initially tried to lower the risk for investors by reducing the unethical conduct, project governance slowly finds its way into the organizations. Some of the trends which are already noticeable are the growing importance of ethical aspects, even in project governance, as well as the importance of combining local and global requirements within project governance. Companies which recognize this and which are able to adopt accordingly will be optimally equipped for the future challenges.

The preparation for this study showed very well that automotive companies still don't get all the benefits out of solid project management. Project management is being taught for years now and many consultants are out to introduce it to all management levels. But in fact project management is still not yet matured in all companies. Reasons, as discussed earlier, are missing know how, lack of senior management support, ignorance and too much complexity. Many companies are just too stuck in day-to-day activities to really improve the project management continuously. So in the next years many of the automotive suppliers will definitely need to strengthen the project management. This may be the decisive success factor. Defining, agreeing and implementing project governance will be the key for those companies. Mass customization with its sheer number of variants and new cooperation models will remove the importance of strong expertise of traditional manufacturing methods. Modern project management will be essential to succeed. As shown in this thesis, project management by itself will also not be the key to success. It must be a (the) central part of the company strategy and thus influence the orientation of the whole company.

Another big potential lies in the different ways how projects are managed. If the big automotive players could agree on widely recognized standards, the whole industry would significantly improve. The quality of projects would increase dramatically and the savings throughout the industry would be enormous. This will even be more important than expected, as momentarily many new suppliers, driven by the E-Hype, enter the various fields. For them not just managing the hard facts but also the soft facts will be a big

challenge. Getting more and more efficient will be important to survive in the automotive industry. This will also be very true for project management. Companies will have to know exactly where they are and what they have to do in order to improve. This challenge also means that they need the right data to analyze their project management and to define the direction they want to go.

One of the changes that came with the globalization is the fact that the companies now act on a global market place. Customers, suppliers and other partners can be located everywhere around the globe. The network gets increasingly complicated and so does the project management. While this can be a great opportunity for companies, many firms will fail because they will not be prepared to handle these issues the right way. There is no other option for companies than to align their project management processes on a global base.

According to Hab/Wagner (Hab/Wagner (2006), p.320), managing the unforeseen in the right way will become more and more important. Everyone will agree that a solid planning is very important as the the number of unpredictable factors will also increase. New technologies, changes in legislation, changes coming from customers on short notice. These are just some topics to name and which cannot be planned. While processes and software tools make the management believe that everything is taken care of, the importance of skilled and experienced project managers will increase further. If project managers are able to make the right intuitive decisions without having all the information, then they are getting priceless for any company.

To have this kind of project managers employed in future, companies have to act on time. They have to either look for them externally or train them now. Spending on them and providing them with the right environment will be wisely invested money.

Considering all these topics it is obvious that the right approach and deep understanding in regards of project governance will be inevitable for any successful company.

8 List of Abbreviations

APQP: Advanced Product Quality Planning and Control Plan

CAPEX: Capital Expenditure

CEO: Chief Executive Officer

CMMI: Capability Maturity Model Integration

C3PM: Cross Company Collaboration Project Management

DMU: Digital Mock-Up

EBIT: Earnings before Interest and Taxes

EOP: End of Production

FMEA: Failure Mode and Effects Analysis

GM: General Manager

IEC: International Electro-technical Commission

IP: Instrument Panel

IRR: Internal Rate of Return

ISO: International Organization for Standardization

IT: Information Technology

KPI: Key Performance Indicators

LOP: List of Open Points

MAGNA: representing MAGNA Exteriors & Interiors EU

OEM: Original Equipment Manufacturer

OGC: Office of Government Commerce

PDCA: Plan Do Check Act

PERT: Project Evaluation and Review Technique

PMO: Project Management Office

PPAP: Production Part Approval Process

PSP: Project Structure Plan

PRINCE: PRojects IN Controlled Environments

P&L: Profit and Loss

RASIC: Responsible, Approve, Support, Inform, Control

RFQ: Request for quotation

ROFE: Return of Funds Employed

R & D: Research and Development

SG&A: Selling, General, and Administrative

SOP: Start of Production

SOX: Sarbanes–Oxley Act

SPICE: Software Process Improvement and Capability Determination

SUV: Sports Utility Vehicle

TCE: Transaction Cost Economics

TS: Technical Specification

VDA: Verband der deutschen Automobilindustrie,
The German Association of the Automotive Industry

WBS: Work Breakdown Structure

6 σ: Six Sigma

8D: Eight Disciplines Problem Solving

9 List of Tables

10 Bibliography

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11 Appendixes

11.1 Questionnaire A „Top Management“

Name:
Position:

Do you know how many projects you currently run?

Do you know how many of them are „red” projects?

How often do you check the status yourself?

Consider you yourself as being in charge of the projects or would you say someone else in charge of them?

Please explain how many layers are between you and a project manager?

Who informs you about an unexpected problem that arises?

Do project reviews play an important role?

Who is conducting these reviews?

Do you participate in those reviews?

Are projects audited regarding processes,…?

Do you think that your project organization is almost optimal?

If not, where would it need to be improved?

How do the reporting routines look like?

How often are projects reviewed (periodic reviews, milestone reviews,…)?

How do you assure that the right project managers are in charge?

Do they get continuing training?

If yes, how does it look like?

After all what are the main key factors for governing projects successfully?

And what are the major mistakes that are repeated over and over again?

Is part of your salary/bonus linked to the results of the projects (flawless launches, met cost targets,…)?

Additional remarks, comments:

11.2 Questionnaire B „Middle Management“

Name:
Position:

Do you know how many projects you currently run?

Do you know how many of them are „red” projects?

How often do you check the status yourself?

Consider you yourself as being in charge of the projects or would you say someone else in charge of them?

Please explain how many layers are between you and a project manager?

Who informs you about an unexpected problem that arises?

Do project reviews play an important role?

Who is conducting these reviews?

Do you participate in those reviews?

Are projects audited regarding processes,…?

Do you think that your project organization is almost optimal?

If not, where would it need to be improved?

How do the reporting routines look like?

How often are projects reviewed (periodic reviews, milestone reviews,…)?

How do you assure that the right project managers are in charge?

Do they get continuing training?

If yes, how does it look like?

After all what are the main key factors for governing projects successfully?

And what are the major mistakes that are repeated over and over again?

Is part of your salary/bonus linked to the results of the projects (flawless launches, met cost targets,…)?

Additional remarks, comments:

11.3 Questionnaire C „Project Management“

Name:
Position:

Do you plan your projects according to standard procedures (PSP, RASIC,…)?

Is there a single timing that all work with or are there many different timings (engineering, tooling,…)?

If yes, who is in charge for updating?

Are lessons learned mandatory for the project phases?

How do you evaluate and track risks?

Are dates of reviews/milestones transparent to each project team member?

How often are projects reviewed (periodic reviews, milestone reviews,…)?

Is a steering committee obligatory for each project?

How do the reporting routines look like?

Is the effort to do the reporting reasonable?

How often do you report the project status to middle or top management?

Are you being informed about possible problems in time?

Do you get enough support from middle or top management?

Do you get help if needed in time?

Are you free to allocate your team to your wishes or do you have to take who is available?

Do you think that your project organization is almost optimal?

If not, where would it need to be improved?

Are you also in charge for the finance tracking or is it done by a financial controller?

Is part of your salary/bonus linked to the results of the projects (flawless launches, met cost targets,…)?

Do you get enough continuing training?

After all what are the main key factors for governing projects successfully?

And what are the major mistakes that are repeated over and over again?