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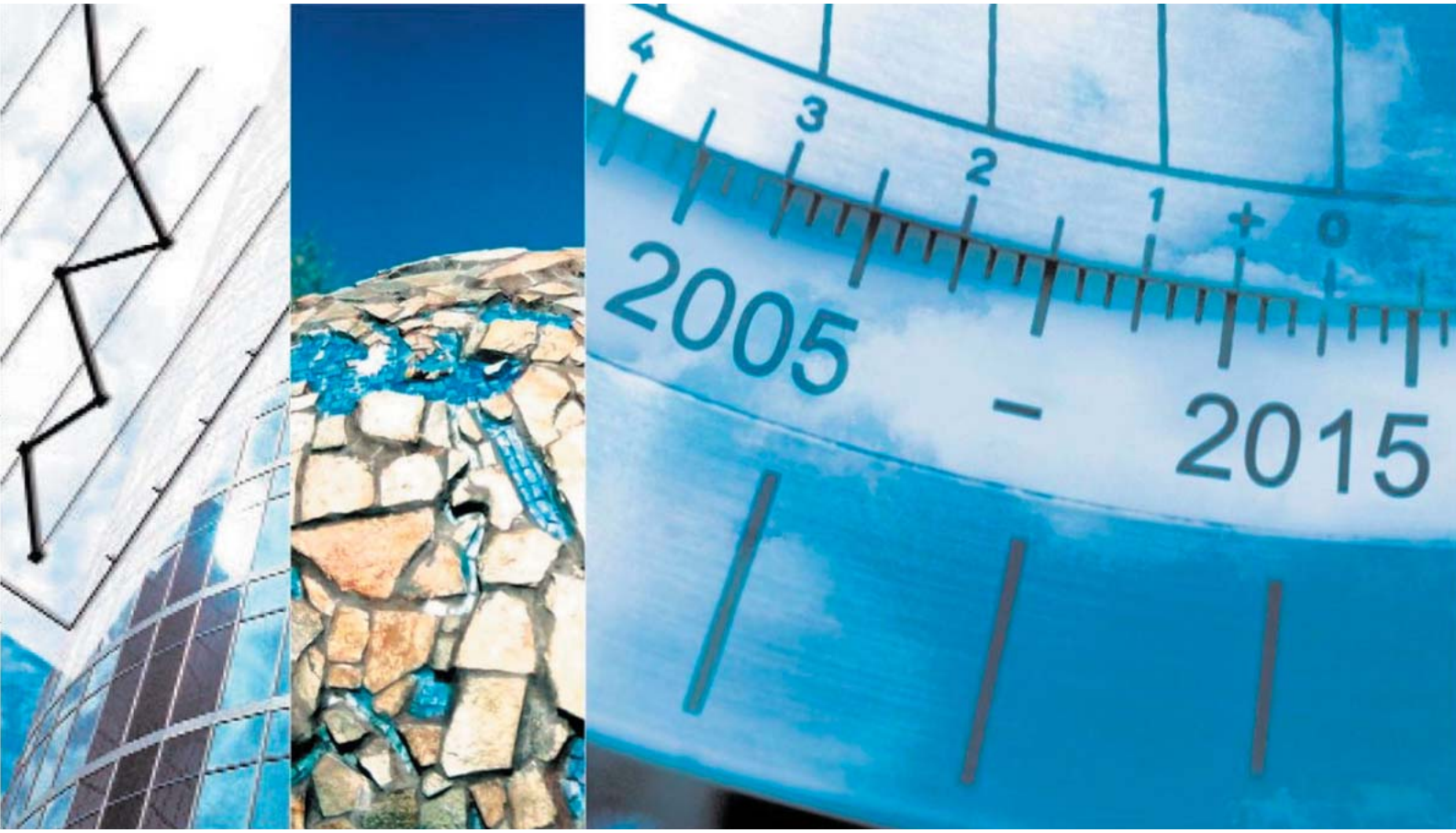

Cluster Management – A Practical Guide

Part A: Overview

gtz Partner for the Future. Worldwide.

CLUSTER MANAGEMENT
A PRACTICAL GUIDE

PART A: OVERVIEW

Developed for the Economic Development and Employment Promotion Program implemented by the Ministry of Economy, Labor and Entrepreneurship of the Republic of Croatia and the Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH

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FOREWORD

Even in times when economies where still focused on national markets, business clusters have already played an important role for enhancing competitiveness. The spatial proximity of clusters provides advantages for small and medium enterprises (SME) of similar or dependant branches of the economy: through the use of new technologies from nearby research institutes, through joint purchasing strategies, by attraction of service providers (as those find in clusters the critical mass for their services to become profitable), or through different forms of cooperation which reach from cooperation in production to joint marketing, just to name the most important ones.

In the last decades globalization has led to an increased diversification of the division of labour as more business locations are being integrated into the world market and SME face increased competition. But considering that the world market is growing exponentially, new chances open up as well.

For SME the cooperation with other enterprises is often the only possibility to become part of global value chains. Forms of cooperation used are downright divers and of different intensity, however all forms of rather complex cooperation between businesses need one thing for their efficient and effective operation: management.

The manual at hand provides an encompassing and concise overview of methods and instruments of cluster management. It was developed in Croatia commissioned by the GTZ and financed by the German Ministry for Economic Cooperation and Development (BMZ). It is, however, not only applicable to Croatia and to other transformation countries, but by all means suitable for a worldwide use. In addition to being useful for cluster management as such, it can also be applied to other forms of enterprise cooperation which go beyond pure supplier-buyer-relationships, such as: industry and technology parks, business incubators, and even certain forms of regional economic development activities.

A number of private sector development and local and regional economic development projects will certainly profit tremendously from this manual. Therefore I would like to express my gratitude to the authors also in the name of all those working in development cooperation who will make use of the handbook. Additionally, apart from development cooperation, chances are good that this manual will be used broadly, as most clusters and similar cooperation structures in this world have been established without the support of donors and out of pure economic reasoning and will do so also in the future. We therefore hope that this manual finds a broad acceptance and experiences frequent use, particularly in developing countries, and that it may provide a significant input to their economic development.

Helpful suggestions, criticism and additions are most welcome (karin.hoerhan@gtz.de); reproduction (also of parts) of the manual is desired if the source is cited.

Dr. Rainer Engels, (Section Economic Policy and Private Sector Development, Division Economic Development and Employment, Planning and Development Department) GTZ

1. TERMS

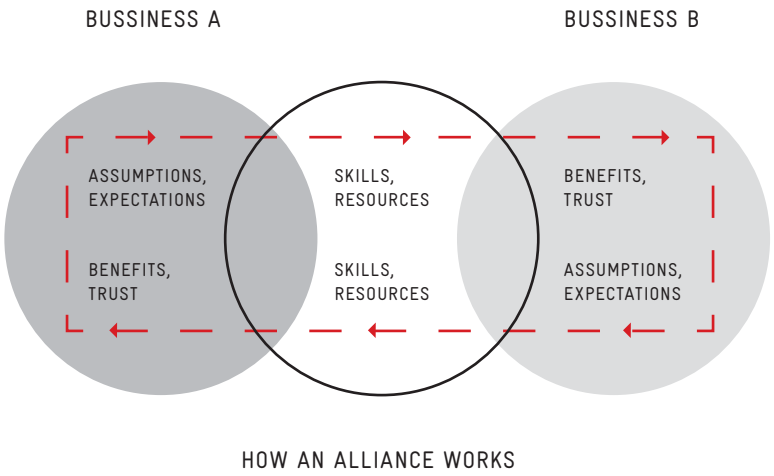
Strategic alliance

It starts with a strategic alliance: **We're stronger together**

Every company knows from experience what a strategic alliance is. Companies are not isolated entities – they exist in a complex network of relationships with suppliers, customers, competitors and public authorities. Successful handling of these relationships can result in a clear competitive advantage.

A **strategic alliance** is a joint activity by at least two businesses with the goal of changing their own situation. Under the heading **"We're stronger together"** each of the actors involved contributes special abilities, in order to profit from cooperation with other businesses. The joint capability is enhanced, and is to a certain extent greater than the sum of the individual contributions. This is the added value of a strategic alliance. It is also known as a "synergy effect".

Figure 1
The basic model of a strategic alliance



Strategic alliances generally have at least the following characteristics:

Orientation on benefits

- The partners expect a benefit (**added value**) for themselves. They are proceeding on the conviction that the anticipated added value can only be achieved through strategic alliance – or, at least, more easily. (**orientation on benefits**)

Orientation on strengths

- Partners in a strategic alliance focus on their strengths in working together. The anticipated added value in the alliance arises out of the interaction of specific strengths of the partners in the alliance. (**orientation on strengths**)

- The partners in the alliance bring in specific strengths, but not their businesses as a whole. (**Partial link**)
- The partners in the alliance maintain their autonomy (**functional autonomy**).
- The structural alliance gives rise to a new system of relationships.

Businesses form alliances for various reasons

There are any number of different reasons for and goals of strategic alliances. In many cases businesses enter into alliances because they share complementary characteristics. They are partners in a **value chain** or they use similar technologies or need similar know-how by their employees which they can organise better and more cheaply in joint trainings.

Where more and more companies in an industry or along a value chain start to organise in multiple alliances, the result is a cluster.

Clusters or networks

Clusters are networks of businesses and complementary entities

Clusters are (regional) concentrations of businesses including their service providers along a value chain – We also speak of **networks** of complementary businesses in this situation.

Successful clusters mostly involve a complementary mix of three kinds of businesses:

- Internationally active companies which are particularly strong in the market and are technological leaders,
- Suppliers or supplementary businesses (often small or medium sized enterprises – SMEs),
- Particularly innovative and dynamic knowledge-based specialists (e.g. research facilities, advanced training institutions, ICT specialists etc).

Clusters can be promoted by cluster-oriented policies

Economic and regional policy supports cluster formation and development by establishing or promoting the necessary (hard and soft) infrastructures. In many countries, policy also promotes the creation of cluster structures (**cluster management**) and the services of cluster management to the businesses in clusters.

Clusters are **networks of alliances** between a large number of different actors in a (regional) production system.

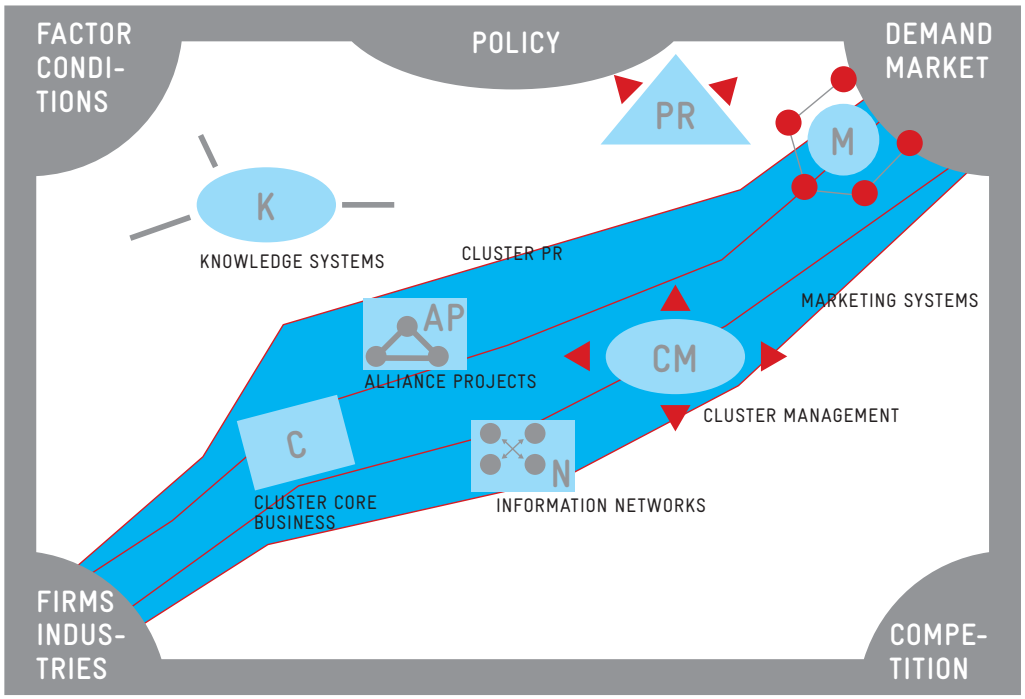
1. TERMS

The following factors are important for the success of a cluster:

Success factors for networks (clusters)

- Businesses with adequate potential output in terms of economic performance, market access and ability to innovate
- Clear expectation of and orientation towards benefits as a basis for active involvement of the partners in the cluster and the cluster activities
- Readiness to engage in active pooling of knowledge, and specifically of so-called "tacit knowledge"
- Establishing and maintaining reciprocal trust as a basis
- Joint network management by all partners to coordinate cluster activities and handle internal and external networking (cluster management)
- Development of a common image to the public and the markets (cluster PR and marketing systems).

Cluster development



2. BENEFITS

Cluster policy today is a leading concept in (regional) economic promotion

Since **Michael Porter** published his book on the competitive advantages of nations in the early 90s, the cluster concept has become an important instrument of structural and regional policy in Europe.

What is the reason for this extraordinary interest in an extremely imprecise topic?

Why clusters?

Clusters as a response to globalisation

It is a buzzword, but nevertheless true: **globalisation** is making life difficult for businesses; everything is becoming faster, bigger and less predictable. To succeed in the increasingly complex and turbulent environments, businesses have to

- Sell a stream of new and better products on (often remote and heavily contested) growth markets **and**
- Take the lead in quality and technologies **and**
- Produce and sell at competitive costs.

Innovation as the decisive factor in competition

Innovation – the permanent development and introduction of new processes, products, organisation and management systems and the successful development of new markets – is becoming the keystone of sustainable competitiveness.

Knowledge is the leading factor for success

This is only possible for very **flexible** and **knowledge-based** businesses, which also have sufficient market know-how, product knowledge, ability to learn and capital.

However, all-rounders are rare, and it is enormously expensive to try and be the best in every field.

This is why globalisation is forcing businesses to concentrate more on their **core competences** and take on just a small section of the entire **added value chain** from the raw materials to the product ready for the consumer.

Strategic alliances are the second leading factor for success

In short, globalisation is leading to an increasing division of labour and increasing economic interrelationships. The success of any one business is depending more and more on the contribution of other businesses. **Cooperation** is becoming the key, with the success of a business increasingly resembling an orchestral concert where numerous soloists blend in an unmistakable overall sound.

Clusters arise through location decisions by businesses and are self-reinforcing.

The first clusters were discovered, rather than made. Observers have noted that the economy flourishes in regions where there are many outstanding businesses in strategic alliances in an industry or along a value chain and where there are also the corresponding service providers close by, such as engineers, technical agencies, lawyers, professional accountants and tax advisers, management consultants and R&D institutes, universities and advanced training institutions. Clusters can arise on their own because more suppliers and supplementary service providers relocate or establish businesses in places where there are already enough partners. These location decisions upgrade the region in question, giving it appeal for new complementary relocations – thus the cluster grows.

2. BENEFITS

Benefits to SMEs

Clusters offer small and medium sized enterprises (SMEs) in particular an opportunity to establish an international profile through networking and strategic alliances. European regions with predominantly SME structures, such as northern Italy, Denmark, Wales and northern Spain (to mention just a few examples) have improved their international position through cluster formation.

Possible advantages to SMEs from participating in a cluster:

- Growth of production and employment
- A boost to innovation
- Improved competence and know-how
- Improved quality and productivity
- Higher exports
- Better resource utilisation through cooperation.

Clusters are based on strategic alliances, and without them there are no clusters. So how do strategic alliances benefit the businesses involved, and what risks do they involve?

Benefits of and prerequisites for strategic alliances

Alliances open up possibilities for partners which are not available to them individually.

Strategic alliances are a specific form of cooperation in which participants retain their independence, and are not only allies but also competitors at the same time. The details emerge during the process of cooperation.

Strategic alliances open up possibilities for partners which would otherwise be inaccessible or at least difficult to attain. Almost all areas of a business are conceivable as part of an alliance.

These include purchasing cooperatives, outsourcing by multiple businesses (e.g. IT), sales alliances (particularly interesting when it comes to opening up new markets), joint human resources development, research alliances, capacity coordination – to name just a few of the possibilities for strategic alliances.

A successful strategic alliance needs

However, regardless of the object of the alliance, there are certain features which apply in all successful strategic alliances:

Trust

- Alliance partners can trust each other. As relevant internal data is always used as part of strategic alliances, such trust is essential.

Voluntary participation

- All project members are there voluntarily and retain their independence. This is the only way to ensure a high quality of project input and output.

Open style

- Cooperation has a dynamic and open style. A rigid structure will be unable to exploit opportunities arising in the course of the project.

- The participants remain competitors in other areas, so that there is no question of cartel formation. This boosts the dynamic level of the alliances and ensures a stimulating environment.

Cooperation and competition

- The cooperative project is managed by the partners themselves. It is particularly important to avoid attempts by public authorities or outside businesses to influence the alliance.

Self management

- The strategic alliance results in clear additional benefits to all participants.

Benefits

If all these factors are present, strategic alliances offer an attractive prospect for a business.

SMEs can counter the problems of small size

For SMEs in particular there is also the appeal of gaining access to missing resources and know-how through strategic alliances, while offering their own to the partner. This allows each partner to concentrate on its strengths while using the other businesses to supplement the other areas.

All-round offers strengthen market positions

For example, single-source solutions can be offered with joint planning, organisation and production and / or marketing.

Innovation is often only possible in cooperation

Joint innovative efforts have become increasingly important in view of steadily shortening product cycles. SMEs in particular can often only provide competitive funding for R&D by pooling research resources. However, it is important to avoid using research alliances to cut costs. This would neutralise the effect of the alliance.

Innovation is not just a matter of classic R&D – the term also extends to new products, processes and new forms of organisation.

3. LIMITATIONS

Clusters and strategic alliances are not a panacea

Clusters are a tool for the further development of existing regional or entrepreneurial strengths. They are not suitable as a short-term solution for structural weaknesses.

Clusters need critical mass…

An adequate number of supplementary and active businesses with at least a European level of competitiveness is a prerequisite for successful cluster development.

…common core competences and…

A clear focus on core competences which are identifiable in practice is necessary. Clusters must have a common identity.

…common structures.

Clusters need appropriate, lean and professional control and management structures.

Resources and support are needed from politics and the administration.

The authorities can provide decisive support for clusters through appropriate stimulating programmes, partnerships and innovative service models (such as the „one stop shop“ model), but they cannot „build“ clusters.

Cooperation is not simple

Obstacles to clusters and strategic alliances

- Lack of match between structures and cultures in the partner businesses
- Lack of legal or financial possibilities for cooperation
- Lack of entrepreneurial attitude or competence
- Lack of trust in alliance partners and involved institutions (shortcomings in the alliance culture)
- Lack of knowledge of partners
- Failure to involve partner employees in the network
- Lack of informal networking
- Vague or unrealistic expectations with regard to the strategic alliance.

4. PHASES

Preparation

Good preparation gets you halfway to implementation

Clusters and strategic alliances do not simply fall from the sky – they usually have to be created step by step. Good preparation is half the story, although it needs to be stressed that clusters and strategic alliances cannot be simply planned on the drawing board, and that too much technical planning can actually restrict the network's ability to act. The best concept for preparation is probably to plan solidly while remaining open to the steady flow of new challenges.

Implementation

Openness and dynamism are characteristics of good implementation

Implementing a strategic alliance or a cluster project is never a matter of rigidly implementing the plan from the preparation stage, but is instead an open and dynamic process. A flexible and creative response is needed to changes in the markets and institutional environment.

This is why rules for cooperation and good, transparent as well as tight information and communication are particularly important elements in successful implementation.

Change

Without change, things become rigid and useless.

Change is not a result of the implementation – as already described, it is a permanent process. However, there are relatively long phases or stages of development in a strategic alliance or a cluster after which it is helpful to draw up an interim balance and review the chosen approach.

Evaluation and learning are the foundations of change, with the job of ensuring that a strategic alliance or network either continues to be useful or is terminated if its fundamental elements no longer exist.

5. TOPICS

5.1. PREPARATION | **5.1.1 THE FIRST STEPS**

Key questions

The 10 decisive questions when starting

01. What do we want to achieve through the strategic alliance or cluster?
02. Can we use other means to reach our goal?
03. What partners does the project need?
04. Do the partners have sufficient economic, organisational and innovative capacity?
05. What benefits (strengths) are the partners bringing into to the network?
06. What benefits does the network offer its partners?
07. What existing successful or solid strategic alliances can the networking build on?
08. Is the "chemistry" between the partners right?
09. What trust-building measures are required?
10. Are the goals and functions of the strategic alliance or network clear to all the relevant stakeholders?

Key factors

Each strategic alliance project requires thorough preparation and planning before implementation can be considered. It will be necessary to proceed in a number of steps. **The following steps are required:**

01. The first step is an **analysis of strengths, weaknesses, opportunities and threats** (SWOT). — SWOT
02. This is followed by formulating the specific **intentions for strategic alliance or cluster goals.** — Goals
03. In the next step the **potential partners** needed for the project are defined and invited to join. — Check on partners

1. Strengths, weaknesses, opportunities and threats

Solid analysis is necessary …

First, it is necessary to identify where there is potential for cooperation in the businesses. **It is useful here to go through the various operations of the businesses:**

- Purchasing
- Logistics
- Human resources development
- Human resources use
- Organisational structures
- Bought in and outsourced services
- Production allocation (capacity coordination)
- R&D
- Sales
- Market research
- Marketing
- Customer service.

In each of these areas there will be strengths and weaknesses and potential for expansion and cost savings. These should be listed explicitly, for example in a positive / negative list. Involving a number of people in the analysis improves the quality of the exercise. This also adds new aspects to the assessment. Planned projects should also be included in the analysis.

The expected changes in the markets also have to be included in the analysis, as these are the basis for identifying future opportunities and threats.

If the business has already identified specific areas for strategic alliance, it may be enough to draw up a detailed list for these areas alone. For projects above a certain size, it is useful to call in a professional management consult at this stage specialising in the potential of strategic alliances.

5. TOPICS

5.1. PREPARATION | **5.1.1 THE FIRST STEPS**

2. Strategic alliance intensions and cluster goals

… for defining realistic goals

The SWOT analysis can be used to formulate areas for strategic alliance or priorities for clusters. However, these need to be defined in more detail. If, for example, the analysis has shown that a distribution alliance would be interesting for the business, it is necessary to define what exactly is understood by that. While this does not require detailed planning, the picture of the strategic alliance should become clearer.

- What benefits can the business generate for itself from the strategic alliance?
- What benefits can it offer its partners? What competences is the business prepared to bring into the strategic alliance?
- How far is the business prepared to open itself up to its partner?
- What business details does it intend to keep to itself?

Form and intensity of cooperation

The questions to be settled here include the form of the strategic alliance (loose association, separate businesses, cooperative, public forum) – there are very many ways of structuring strategic alliances, organisationally and legally. These questions do not require detailed elaboration at this stage, but an outline helps those seeking a strategic alliance and their potential partners in the subsequent decision and operationalisation of the project.

The result – a written concept for the strategic alliance or cluster

Once these decisions are taken, their key points should be set down in writing so that they can be referred to in subsequent reviews.

3. Choosing partners

The success of many strategic alliances and clusters depends decisively on choosing the right partners

Sometimes a strategic alliance or cluster project is started with specific partners already in mind, or the partners may get together first and then develop the concept. In these cases, this phase is very brief. However, the search for partners in a strategic alliance can be one of the most difficult parts. In contrast to highly concrete and limited strategic alliances, clusters are more open, and accordingly need more time to attract (more) partners.

Management consultants familiar with the industry or the specific type of alliance sought can be consulted. The most important tool here is personal knowledge of the industry.

For attracting partners: define things clearly and invite them to share in the process

Subsequently, good preparation of the documentation is needed for initial discussions of a strategic alliance with potential partner businesses. The precision required also depends on the level of trust. Trusted partners should be included in planning the strategic alliance as early as possible, while with less trusted partners the level of precision in the documentation should be significantly higher. Nobody should ever get the feeling in the discussions that they are being confronted with a fait accompli.

It is also important to present the benefits of the alliance clearly together with the expectations and requirements, making it easier for the others to reach a well-founded decision.

After the initial discussions, there is a gradual process during which it becomes clear which businesses are genuinely ready to cooperate. This **core group** goes on to prepare the strategic alliance or network in detail; although the alliance or cluster should continue to be open to other seriously interested parties.

Detailed planning

Formulate themes and rules for cooperation, rights and duties of partners, and management of the strategic alliance or cluster, while leaving scope for new developments.

After a core group has been formed which is ready to cooperate, the rules applying within the group have to be defined, e.g. how new members are added, how decisions are taken, who is responsible for what etc. The **rules** are defined in small groups, usually quickly and relatively informally, and sometimes also in tacit agreement.

Once the rules have been settled, it is necessary to establish the detailed sequence of events and responsibilities. This plan of deployment is the basis for implementing the strategic alliance or cluster.

The themes addressed in the first outline for the alliance – transfers of competence, legal form, legal title, cost apportionments, benefits gained etc – now need to be defined clearly and decisions be taken.

Inform and involve management and other key employees in the partner businesses.

This is also the time to involve employees at lower levels more closely again. They contribute expertise from their own areas of specialisation, and contacts between experts in the individual businesses also speed up communication between the businesses.

Research possible government promotional programmes

In the final preparatory phase – if not before – it is necessary to research whether the planned activities qualify for a government promotional programme. This allows modification of the detailed planning to meet specific government requirements. Something to bear in mind, however, is that government programmes often require extensive disclosure of information about the business.

5. TOPICS

5.1. PREPARATION | **5.1.2 DEVELOP GOALS AND STRATEGIES**

Key questions

The key questions on goals and strategies

01. Setting goals: what are our goals?

02. Why develop a cluster strategy?

03. Components and content of the strategy?

04. How do I proceed?

05. How do I plan implementation?

Key factors

Joint goals are important for identification with the cluster

Formulating **joint goals** and the resulting strategy play a central role in integrating cluster members and promoting their identification with the cluster. The goal-setting process creates a common foundation for work and trust in subsequent cooperation. The set of goals represents the intersection of often widely differing interests of the businesses, and determines the general direction the cluster will take. Clear goals are essential for a common understanding of the impending tasks in cluster development, and for planning and implementing the necessary measures. **Management by objectives** (MBO) has proved its value not only in individual businesses but also in clusters.

In setting goals, the following points should be considered:

Important points in the goal setting process

- Work on setting common goals should start as early as possible.
- Work on developing a strategy and other cluster activities can only start once there are clear goals.
- The goals should not be too broad, to ensure specialisation and profile formation for the cluster.
- Conversely, the thematic focus should not be too narrow, in order to leave open possibilities for development and transformation (clusters evolve).
- The goals should be formulated as precisely as possible, to permit derivation of concrete measures and activities.
- The goals should be attainable and measurable.
- Indicators should be developed for achieving goals.
- The goal setting process should be a moderated process involving all cluster members (identification with goals).
- The goal setting process is a strategic management responsibility.

Setting the individual goals depends crucially on what kind of goals, desires and expectations members associate with the cluster. Several clusters – for example, the German competence networks – are more concerned with strengthening innovative capability, while others focus on lobbying or concrete market activities (exporting). **Typical goals in numerous clusters are:**

Typical cluster goals

- Joint R&D
- Promoting innovation
- Joint marketing
- Export promotion, developing new markets
- Joint procurement, sourcing
- Providing and using services to businesses (cluster services)
- Training and Continuing Professional Education (CPE)
- Utilising synergies and economies of scale
- Lobbying

The goals must be regularly reviewed and revised if necessary

It is important to have monitoring in place (see section "Monitoring & Evaluation") to review goals for current relevance at regular intervals and, if necessary, revise and adjust the goals.
It can often be necessary to reconsider and reformulate existing goals as part of a reorientation of a cluster. To emphasise the particular importance of goals as a joint basis and **roadmap** for cluster work, a cluster's most important goals should be fixed in the association articles or terms of reference.

Deriving the cluster strategy from the goals

Once the joint goals of the cluster have been agreed and written down, the next stage is to use them to derive a **strategy**. Formulating such strategies is a crucial task, particularly in the formative phase of a cluster, as this involves determining the path for reaching the goals and the measures required. Here again, strategic development should **actively involve all cluster members**, so that the final result is a joint product which everyone has worked on and is accepted by all.

Everyone must be involved in strategy development

Strategy as a guideline for a goal and results oriented cooperation

Without a clear strategy there is the danger that the cluster might get caught up in action for its own sake, that joint activities might not be coordinated and goals not be reached.
By contrast, the strategy establishes a common direction for joint work and allows for a goal-oriented approach to cooperation. The strategy makes it possible to moderate and plan the process of shaping the future for cluster members. Those tasks which individual businesses could never tackle alone can be operationalised and solved jointly by spreading the load.

5. TOPICS

5.1. PREPARATION | 5.1.2 DEVELOP GOALS AND STRATEGIES

Operational orientation of strategy

If the strategic alliances particularly feature SMEs, which are often under enormous competitive pressure, a visionary approach is not advisable for the development of a cluster strategy. Instead questions of strategic management should be focused on, with **concrete steps and measures** to improve the competitiveness of cluster members (**operational strategic orientation**). In the interests of sustainable competitiveness it is also the strategy's task to enable the cluster to respond flexibly as a **learning organisation** to changing market conditions and innovations.

Markets change – strategies have to stay flexible too

This naturally brings us to the question of the **strategy's content and structure**: how do I put my strategy together, what aspects should it cover, and how much detail is needed?

Structure and content of the cluster strategy

Basically, the cluster strategy should cover the following points or sections:

- Analysis of sectoral competitive situation
- Systematic SWOT analysis (macro, meso and micro levels)
- Trend analysis (markets and technologies)
- International benchmarking
- Analysis of cluster potential
- Cluster vision
- Cluster goals
- Definition of the cluster's range of outputs
- Organisational structure
- Implementation strategy (steps)
- Monitoring & evaluation (M&E)
- Action plan

Starting point analysis as basis for strategy development

The basis for strategy development is provided by the **starting point analysis** and the environmental conditions relevant for the cluster. The important point of a systematic **SWOT analysis** is to establish a realistic picture of strengths, weaknesses, opportunities and threats. The analysis of strengths and weaknesses is part of the internal analysis and relates to the cluster and its members. The classic approach to the internal analysis is the **value chain approach**, which distinguishes between primary activities (goods inward logistics, production, goods outward logistics, marketing and distribution, customer service) and secondary activities (administration, management, human resources, R&D, procurement). There are various approaches and tools for the external analysis, e.g. the "**five forces**" approach to evaluating the central determinants of competition (industry competitors, suppliers, new entrants, buyers and substitutes).

SWOT analysis

Five forces

Broadening the perspective

Just as in the trend analysis, the aim here is to broaden the perspective. Specifically **international market developments and innovations** need to be taken into account, as the cluster has to be able to act and stay abreast of changes internationally.

There is a similar purpose to the section on international **benchmarking** which involves learning from international best practices – i.e. other clusters – and deriving strategic measures for the cluster in question. For the purposes of international benchmarking it is advisable to call on the services of international consultants, e.g. GTZ, DEZA or USAID.

Various tools are available for analysing cluster potential

The **analysis of cluster potential** involves identifying the starting conditions and opportunities for cooperation within a cluster. A number of tools have been scientifically developed; some of them are highly complex. Tools available include the input-output analysis, the GEM analysis and the value chain analysis. However, a purely statistical analysis can never be sufficient, as the primary issue here is a complex system of actors and social contacts which can only be captured systemically, i.e. through meetings, surveys and various forms of joint reflection and review.

Operationalising the strategy in an action plan

Based on the results of the various analyses, the next stage can be the **formulation of the actual strategy** (vision, goal, range of services, etc) which is then operationalised in an **action plan**. The action plan is the core for subsequent implementation of the strategy.

To allow for an evaluation of the strategic measures and the success of implementation it is advisable to include a section on **monitoring & evaluation** which identifies the corresponding **indicators**.

Learning from the best

One central task of the cluster is to improve the international competitive position of the individual member businesses and the cluster as a whole. This is why it is necessary in developing the strategy to focus consistently on international standards and know-how. The slogan here is **"learning from the world's best"**.

5. TOPICS

5.1. PREPARATION | 5.1.2 DEVELOP GOALS AND STRATEGIES

Paradigm of the integrated added value chain

Another important paradigm in strategy development, particularly for production oriented clusters, is the **integrated value chain**, i.e. closing gaps in the value chain and developing innovative potential. The cluster strategy should take account of these changed competitive conditions and include partners at an early stage from education, science, R&D and government actors in order to create a **cluster specific innovation system**.

Creating an innovation system by integrating all relevant actors

Strategy development: how to proceed

Cluster analyses and strategy development can be very time consuming and cost intensive. Compact clusters in particular, where members already know each other relatively well and goals have been clarified, should thus act quickly to give the cluster visibility and impact. It is important for members to have a feeling of **dynamic cluster development** and not lose interest. As a result, work on establishing the cluster and its strategy should be ongoing and if possible without extended breaks.

Maintaining momentum and dynamism

The key steps in strategy development

The following approach is recommended for developing a cluster strategy:

Step 1: Identify "clusterpreneurs"

Step 2: Hold a strategy workshop with all cluster members and partners

Step 3: Form a core team or strategy group to develop the strategy

Step 4: Develop the strategy (first draft)

Step 5: Hold more strategy workshops with all cluster members (feedback)

Step 6: Draft the final version of the cluster strategy

Step 7: Adoption of the final cluster strategy by all cluster members.

Promoters, multipliers and clusterpreneurs

An important initial element in strategy development is attracting **promoters and multipliers** in the businesses and institutions relevant to the cluster, and incorporating these directly into the strategy development process. A central role in this is played by the "**clusterpreneurs**", representatives of the businesses who are particularly active in and committed to the cluster. They serve as figureheads for the cluster. After holding the first joint strategy workshop, a **core team** or strategy group should be formed from this group of clusterpreneurs to formulate the strategy, with one member of the core team acting as moderator or project manager. The current versions of the strategy should be presented to all cluster members at regular intervals and their feedback should be integrated into the strategy. This allows for an interactive process with multiple feedback loops which generates a final version of the cluster strategy for joint adoption by the cluster members.

Regular feedback and communication

Demand and customer orientation in strategy development

Demand and customer orientation also plays a central role in strategy development. The specific ideas about goals and needs of cluster members should be surveyed in the workshops and then expressed in the strategy (e.g. goals, range of services). The issue of **export promotion** has proved very useful in initialising the goal setting and strategy development process, as this arouses great interest among most businesses and there is no direct competition between cluster members in this field, in contrast to the local and national market.

It is accordingly significantly easier to get businesses to commit to international export markets in a cluster which they would otherwise be unable to access as individual businesses.

Trust is essential

Even in strategy development it is still true that successful cooperation is virtually impossible without a certain basic stock of existing relationships and a certain **relationship of trust**. To put it another way, there must already be a certain cooperative culture.

From strategy development to implementation

Once the cluster strategy has been formulated it has to be **turned into concrete measures and activities**. A useful tool in strategy implementation is the **action plan** which operationalises the goals and measures expressed in the strategy. The action plan is obtained by deriving concrete activities from the goals in the strategy and assigning them to specific individuals responsible for implementation. In addition, a specific timetable is set for the individual tasks and activities, together with the results to be achieved – the so-called "deliverables". Milestones are set for achieving particularly important results of implementation, which help closer tracking of success in implementing the strategy.

The action plan

Important points in strategy implementation

The following points in particular should be considered in implementing the strategy:

- Implementation should proceed in small but very operational steps which do not overstrain the cluster members' scarce resources.
- The first activities should be ones that quickly deliver concrete results and promote a shared sense of success among members.
- An ongoing communication to members is needed of both the goals of the strategy and the current level of implementation.
- It is necessary to clearly define responsibilities.
- As many cluster members as possible should be involved in implementing the strategy – everyone should make a contribution.
- Deadlines should be kept as rigidly as possible.
- It is helpful to define interim goals and corresponding milestones on the way to achieving the overall goals for the cluster. This combines operational concreteness with maximum possible flexibility for future developments.

In the case of very large and complex cluster structures it may also be helpful to set up a steering or strategy group to help with decisions for long-term goal setting and strategy development.

Strategic evolution and cluster life cycles

Cluster strategies should not be static constructs, but ensure the dynamic development of the cluster and with it the long-term competitiveness of its members. **The strategic evolution of the cluster** is a basic prerequisite for the cluster' s ability to adapt flexibly to changes in both internal and external conditions (markets). There is a form of **cluster life cycle**. Development and implementation of the strategy both involve managing this life cycle in line with changing market conditions and innovation cycles.

5. TOPICS

5.1. PREPARATION | 5.1.2 DEVELOP GOALS AND STRATEGIES

Balanced scorecard: a tool for strategy implementation

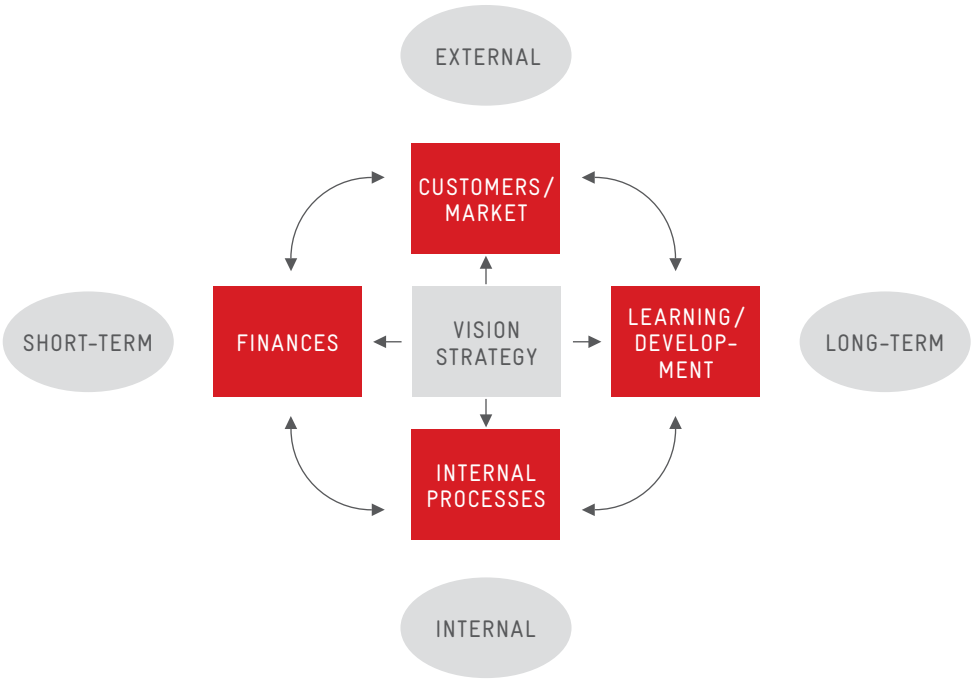
For implementation and control of the strategy it is important to define concrete metrics and operationalised goals. A suitable tool for this is the "**balanced scorecard**". This is a tool to assist long term strategic decision making. **It uses four dimensions:**

- Finance
- Customers and markets
- Business processes
- Learning and development

These dimensions offer almost a holistic view of the organisation or cluster, its relevant environment and the dynamics of interactions, which makes possible rapid correction or adjustment to new developments, or response to deviations. The organisation's performance is seen as a balance between these four dimensions. Developments are presented on easily grasped scorecards.

Logical framework

Another useful tool for the planning and structuring strategy implementation is the "**logical framework**", which is used as a standard tool in numerous EU projects. A system of goals, which are organized in main and secondary goals, is used to derive activities to achieve these and determine the resources needed. Indicators are defined for implementing the activities and to measure the expected results and effects.



5. TOPICS

5.1. PREPARATION | **5.1.3 BUSINESS PLAN AND FINANCING**

Key questions

01. Why does a cluster need a business plan?
02. Structure and content of a business plan?
03. What needs particular attention in drawing up a business plan?
04. How to plan and implement the financing concept for a cluster?
05. What key ratios do you need in controlling?
06. What funding sources are there for clusters?
07. What needs to be considered in soliciting promotional funds?
08. What needs to be considered in a cluster's financing structure?
09. What are typical mistakes in financing clusters?

Key factors

Business plan: operational planning and management instrument for cluster's market-oriented activities

The business plan as a written "**business concept**" describes the goals and strategies of the cluster, the range of products and services, the market as well as the management and organisational structure. There is a close conceptual relationship between the cluster strategy (cf. section 5.1.2) and the business plan, whereas the business plan serves primarily as an optional planning and management instrument for the cluster's **market-oriented activities**. The business plan performs important functions, both internally and externally.

Internal and external functions of the cluster business plan

The most important functions of the business plan within the cluster:

- Management instrument: guidelines for strategic and operational orientation and managing the cluster in the market
- Guidelines for the practical work of cluster management
- Monitoring: monitoring cluster development by comparison with the business plan (target actual comparison)
- Planning instrument: business plan as a starting point for scenario construction and further development of the cluster
- Presentation of internal and external resource needs
- Opportunity to review the cluster concept critically from the entrepreneurial point of view and follow up.

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5.1. PREPARATION | **5.1.3 BUSINESS PLAN AND FINANCING**

The most important functions outside the cluster of the business plan:

- Structured presentation of the cluster's business concept for external use: cluster's business card
- Basis for applying for promotional funds, credits and investment capital from public promotional institutions, investment companies, banks and investors
- Starting point for developing and marketing a specific range of products or services (cluster services)
- Basis for producing communication and PR materials.

A convincing business plan is the prerequisite for attracting promotional funding and capital

For a business plan to perform these extensive functions, it must be convincing in its structure and content. Which sections a businesses plan should include in detail and what size is appropriate naturally depend on the structure of the cluster, its goals, its legal form and membership structure. Nevertheless, there are certain basic topics which every business plan should cover, and which are presented below.

Structure and content of a cluster business plan?

- The first section (**Executive summary**) contains a condensed overview of the business plan (cluster's goals, services offered, market potential etc). The main aim here is to convincingly present the cluster's strategic competitive advantage (USP – unique selling proposition), e.g. the competence of the partners, synergy effects etc, together with the concrete advantages to an investor. Depending on whether the target is a private investor or a public promotional institution, these may be returns, jobs or innovations. When formulating the executive sum mary, the cluster's clear market orientation should be communicated. This section should only be written at the end, as it summarises the contents of the other sections. The section is very important, as readers of business plans often have little time for evaluation, so that they start by reviewing the content of the executive summary. It is accordingly important to get the reader's attention and interest them in the concept from the start.

Executive summary: attracting and convincing the reader

- **Description of the cluster:** this section is primarily concerned with presenting the business concept of the cluster and the story of its evolution logically and convincingly. Just like a business concept, a cluster concept must have a clear benefit to its customers. Besides formal information like legal form and ownership, the key business fields of the cluster (e.g. cluster services, joint R&D etc) should be explained.

The business concept

- **Goals of the cluster, planned investment projects:** building on the current situation of the cluster as described in the previous section, the aim is now to show the cluster's prospects for development. The formulation of strategic goals (cf. section 5.1.2) is particularly important here. This involves formulating not only quantitative goals (growth in turnover and net in come) but also qualitative goals (promoting innovation, developing new market segments etc). If the cluster has financial need for specific strategic investment projects, these should also be explained. Milestones as important interim goals are suitable for presenting the further development of the cluster.

Cluster's goals and development prospects

- **Organisation and cluster management:** in this section it is important to show a potential investor who will manage the cluster and how. The structure and organisational procedures of the cluster (cf. section 5.2.1) should be described, along with the structure of its personnel and management principles. The key personnel, such as the cluster manager, should also be briefly presented (function, professional background, education, additional knowledge). It may be very useful to a cluster here to be able to point to prominent personalities in politics and business who are on the advisory board. This enhances the prestige of the cluster and will ensure additional interest on the part of a potential investor. An organisation chart should be added to visualise the organisation's structure. This section should be particularly carefully formulated, as most investors have little or no experience with clusters and their organisational structures. The importance of this section should not be underestimated, as many investors – particularly from the private sector – believe that they are not investing in ideas but in people and their know-how.

The minds behind the concept

The team has to be convincing

- **Marketing, competition and sales:** the main aspect here is to present the cluster's positioning in the market. The central element of this section is the market analysis, including analysis of potential target groups or (internal and external) customers, competitors and trends. Based on the results of the market analysis, the next element should be the formulation of a marketing strategy model which determines the target groups to be addressed, the products or services offered and the technologies used.With regard to that it is also important to describe the basic orientation of the cluster's marketing strategy (differentiation, cost leadership, concentration. Subsequently it is a matter of presenting the marketing mix, comprising the elements of product mix, price mix, distribution mix and communication mix. For export-oriented clusters it is advisable to formulate an export and market entry strategy. It is particularly important to consider that technical capability and competitive products are not enough for sustainable success in international markets. A professional and fully elaborated marketing concept is the only way of bringing the cluster's capability to its customers' perception. The best product is useless unless the business is perceived!

Positioning the cluster

- Products and services: the cluster's products and services already listed in the section "description of the cluster" must now be described in detail, together with planned future products and services (innovation ideas).In this context, it is also necessary to consider the state of development of the product or service (idea, prototype, market ready).
  With reference to the market and competitive situation described in the previous section, the central advantages of the cluster services and their benefits for internal and external customers should be developed. The processes involved in providing the services should also be described. For product oriented clusters, the production processes should be described in a similar way. This also involves describing the cluster's value chain. Potential investors are particularly interested here in the central added value activities and processes, so that special emphasis should be given to these here. A major problem for numerous companies and clusters in south-east Europe is still meeting quality standards.

The focus is on benefits to customers

5. TOPICS

5.1. PREPARATION | **5.1.3 BUSINESS PLAN AND FINANCING**

This particularly impacts the export capability of cluster members. For this reason, the cluster's efforts to improve product and service quality should also be described. It is particularly important to emphasise efforts by the cluster and its members in the field of process management (cf. section 5.2.3) and certification to ISO standards.

Financing and profitability

- **Financial analysis:** It is important to show in this section that the business concept or cluster concept can be funded and is profitable. Experience shows that this section is particularly important to banks, investors and government promotional institutions. The section should begin by dealing with the current economic situation of the cluster (assuming that the cluster has already been operating for some time). Important parameters include trends in turnover, costs and results, the annual financial statements, changes in personnel and the financial situation (credits, liabilities, receivables). Presentation of the future development of the cluster in financial terms is done with the help of operational planning for the next 3 – 5 years. The plan comprises the following elements: turnover and results, personnel, investment and liquidity. These figures can then be used to determine the investment and finance needed. The cost structure is particularly important for public sector investors, i.e. the breakdown of total costs into the various headings such as personnel, rental, materials etc, as some items may not be financed or subsidised from public funds. Besides the profit forecast, the cash flow is a key figure for potential investors, as this forms the basis for refinancing investment and paying off debt. The cash flow forecast can also be used to make statements about the liquidity of the cluster. Details on this section, such as sample balance sheet and income statement, should be part of the appendix.

What are the opportunities and threats

- **Opportunities and threats:** potential investors naturally want to know not just about opportunities but also the risks associated with their financial investment. The main risks covered by the section should be political or technical developments, shortage of capital, decline in sales and defaults on receivables.

- **Appendix:** the appendix contains details supplementing the information in the business plan. These can include curricula vitae, market analyses, technical reports, financial documentation or articles of association.

Each year, thousands of business plans are written and submitted for review to potential investors and lenders. Most of these are rejected; many are not even read thoroughly. This poses the question, what makes a good business plan? **The following are some points that should be borne in mind when writing a cluster business plan:**

Success factors for business plans

- The business concept should identify a clear customer benefit and be aimed at growing markets.
- Innovative services and products with unique character need to be offered.
- High potential returns should be realistically expected.
- Market orientation and sustainability needs to be given.

- A solid marketing concept should be illustrated.
- International orientation (globalisation) should in the focus.
- When writing the business plan, consider the audience and its interests (public or private sector institutions). It may be necessary to write different versions of the plan, depending on the target group.
- Planning should be based on checkable assumptions and facts to make it objective and realistic.
- A professional and experienced management team should be named.
- Concentration on the key points is a success factor: a short, precise and solid presentation, covering 20 – 30 pages.
- Constant updating of the business plan is necessary.
- Explain technical contents as simply and understandably as possible.
- Show market potential and prospects for development.

In practice, business plans of clusters which have been in existence for some time and established themselves in the market are particularly convincing. Existing structures, products and services (cluster services) and particularly the results achieved should all accordingly be emphasised particularly in the business plan.

Main functions of financial planning: covering the cluster's capital needs and ensuring liquidity

Financial planning is an important element of the business plan and an important management instrument for the cluster. The main responsibilities of financial planning are **meeting capital needs** and **securing liquidity**. Solid financing is a basic prerequisite for a cluster's ability to act and its sustainability.

Planning and implementing the financing concept

Planning and implementing the financial concept should be done in a number of stages:

What costs are incurred and how high are they?

01. **Identify the cost structure:** Determining the expected costs for the cluster is the starting point for subsequent costing and planning. This essentially involves answering the question which costs arise, and how high are they? Typical cost types for a cluster are personnel costs, rental, operating supplies costs (e.g. computer). Additional costs often arise in the formation and start-up phase of a cluster, and these also have to be taken into account.

The cluster must be liquid (i.e. solvent) at all times

02. **Drawing up financial planning:** the goal of financial planning is to secure the cluster's liquidity at all times. The finance plan is drawn up by forecasting the cluster's income and expenditure for the planning period (e.g. 12 months) and calculating the difference. The finance plan is used to determine the cluster's financial and capital that the income and expenditure flows normally do not match. This is particularly true in the cluster's start-up phase. It is advisable to include an adequate liquidity buffer in the financial planning. The job of cluster management and membership is now to access appropriate sources of finance and obtain the necessary funds.

5. TOPICS

5.1. PREPARATION | **5.1.3 BUSINESS PLAN AND FINANCING**

03. Installing a functional accounting system: this involves systematic recording, processing, analysis, evaluation and presentation of figures for all economic aspects of the business or cluster. The operating accounts comprise financial accounts, cost accounts (cost types, cost centres, cost unit accounting) and planning, which has to be developed and implemented under cluster management.

The accounts record and analyse all economically relevant data on the cluster

04. Installing a controlling system: controlling is a multifunctional information and management system covering planning, control and management. As part of controlling, ongoing comparison of planned values (budget figures) with actual figures identifies weaknesses in the cluster (e.g. deviation from financial goals) at an early stage. Cluster management can use the identified deviations to introduce suitable corrective measures. A prerequisite for an effective controlling system is installation of a functioning cost accounting system.

Controlling: synthesis of financial control and planning for the cluster

As part of controlling, the cluster manager should have certain key ratios. **The most important key ratios are described below:**

Controlling and management ratios

Profit ratios:

Return on equity:

$$ROE = \frac{\text{PROFIT}}{\text{EQUITY}} \times 100$$

Return on assets:

$$ROA = \frac{\text{PROFIT + INTEREST ON DEBT}}{\text{EQUITY + BORROWED FUNDS}} \times 100$$

Return on sales:

$$\text{RETURN ON SALES (ROS)} = \frac{\text{PROFIT}}{\text{SALES}} \times 100$$

Return on Investment:

$$\text{RETURN ON INVESTMENT (ROI)} = \frac{\text{PROFIT + INTEREST ON DEBT}}{\text{TOTAL CAPITAL}} \times 100$$

Cash flow:

	NET INCOME
+	DEPRECIATION, AMORTISATION
+	INCREASE IN PROVISIONS
–	REDUCTION IN PROVISIONS
=	CASH FLOW

Cash flow is one of the most important ratios for the cluster manager. It can be used as an instrument for measuring the self financing capability of a business or cluster, i.e. the cash flow shows whether investment, repayment of liabilities and distribution of dividends can be met with the profits from ordinary business operations.

Cash flow: indicator of a cluster's self-financing power

Financing and liquidity ratios:

Liquidity I (cash):

$$L_1 = \frac{\text{LIQUID ASSETS}}{\text{CURRENT LIABILITIES}} \times 100$$

Debt ratio I:

$$DR_1 = \frac{\text{TOTAL DEBT}}{\text{NET INCOME}}$$

To achieve the jointly determined goals and strategic competitive advantages for their members, clusters need **solid and sustainable financing**. As a result developing suitable **financing sources** is a matter of crucial importance for cluster management. We can distinguish between two main sources of financing for clusters.

The most important sources of funding for clusters

01. Public sector promotional funding:

Attracting promotional funds

- Grants by regional and local economic promotion institutions
- Promotional funding under EU projects

02. Private sector funding:

- Membership fees
- Income from cluster services
- Commissions or income from intermediating orders (e.g. B2B Export Promotion Service)
- Income from events
- Income from winning public sector projects (national tenders, EU, World Bank)
- Share of income from joint patents and licences (research-intensive clusters)
- Investment companies, Venture Capital (in exceptional instances)
- Sponsorship by major companies.

5. TOPICS

5.1. PREPARATION | **5.1.3 BUSINESS PLAN AND FINANCING**

Even if **sustainability** is the long term goal of a cluster, most clusters need **public promotional funds** (particularly in the start-up phase) for the necessary investment in the cluster infrastructure and to establish a target group specific range of services to members. **In attracting promotional funds, the following points should be considered:**

- Report project in good time and explore possibilities
- Find out about the procedure for allocating funds and follow the rules carefully
- Approach the responsible office (decision making authority)
- Write a solid description of the project or cluster. A presentation in the form of a businesses plan (see above) is particularly suitable here
- Present the project in a context which is relevant to the promotional institution
- Note the focus or goals of the promotional institution (jobs, export, promoting innovation)
- Accept input from the promotional offices, rather than just making demands
- Comply with promotional conditions and requirements
- Always credit the promotion in publications and presentations.

From mixed financing …

Depending on the cluster's structure and goals, **mixed financing** may be advisable for the first 1-2 years with both public promotional funds and private sector income, where the share of public promotional funds should gradually decrease over time. The financing model should be based on a constant flow of income. Public **promotional funds should only supplement the budget**, and never be a central pillar of the financing model. Generally, a cluster should be self financing after at most about three years. Sustainability and **market orientation** play a particularly important role, as public promotional funding is limited. Clusters accordingly need to match their cluster services closely to the needs of their internal and external customers, and develop **private sector income** as early as possible.

… to sustainability

Prerequisite for commercial activity by a cluster: the right legal form

The basic prerequisite for financial sustainability is that the **legal** form of the cluster must allow commercial activity and accumulation of earnings. This need is most closely met by the "GmbH" (private limited company), a hybrid form (cf. section 5.2.1) and the for-profit organisation.

Frequent financing mistakes in clusters

Unfortunately, many clusters fail because of a faulty financing concept. If the necessary funds are lacking, cluster services cannot be provided, so that no added value is generated for members. Members quickly lose interest and the cluster initiative collapses. **Here are some of the most frequent financing errors which cluster managers should avoid at all cost:**

- Promotional funds have not been applied for in time.
- Promotional funds are the central pillar of the financing model.
- Costs have been budgeted too low.
- Financing and capital needs have been budgeted too low.

- No adequate liquidity buffer has been designated in the financial plan.
- Imprecise scheduling of demand for funds and supply of funds leads to liquidity shortages.
- The start-up period of the cluster when there is no income has been underestimated.
- Membership fees were set too low.
- Payment ethics of external customers (Days of Sales Outstanding - DSO) have been misjudged.
- A functioning accounting system is lacking.
- A controlling system is lacking.
- Nonbinding financing commitments are treated as secured.

As cluster financing is a highly complex issue involving a whole range of corporate and tax law aspects, it can often be helpful to call on **external experts** such as tax advisers, management consultants and lawyers.

Practical example:

The **Bulgarian software cluster BASSCOM** (www.basscom.org) in Sofia is organised as an association with 45 members in total (software companies, universities, research institutes). The cluster's activities and services include joint development of international markets (export promotion), promoting technology and innovation, quality management, vocational training and CPE, winning and implementing public sector projects and tenders (EU), and representing the interests of the Bulgarian software industry. **BASSCOM funds itself from the following sources:**

- membership fees (EUR 600 a year)
- income from cluster services
- income from winning public sector projects and tenders (EU)

BASSCOM has sustainable organisation and management structures and its self-financing ratio is 100%. The central pillars of income generation for the cluster are membership fees and specialist services to members (cluster services).

5. TOPICS

5.2. IMPLEMENTATION | **5.2.1. THE ORGANISATION: STRUCTURE AND SYSTEMS**

Key questions

The five decisive questions

01. How important is the organisational structure to the cluster?

02. What requirements does the organisational structure have to meet?

03. Which legal form is most suitable for our cluster?

04. How do I organise my cluster: structure?

05. How do I organise my cluster: processes?

Key factors

Organisation creates a framework for successful cooperation

Clusters are mostly very heterogeneous systems, consisting of a number of member businesses and partners whose information, communication and cooperation has to be structured and organised. Seen in this way, the **organisational structure** of a cluster is of central importance, as formal organisation and rules for cooperation are giving the cluster its binding nature and ensure transparency and accountability for its members. This in turn is the basis for mutual trust, which again is the foundation for successful cooperation. Organisational structures also define the cluster's functions and benefits for its members. They help members to identify themselves with their cluster more strongly. This promotes the emergence of a type of "**corporate identity**". The organisational structure is also a key influence on a cluster's competitiveness and vigour, as hierarchically flat and efficient structures are essential for operating successfully in international markets.

Central elements of a cluster's organisational structure are:

- Legal form (what legal status?)
- Structure (competences and communication pathways: who is responsible for what in the cluster?)
- Systems (organisation of operations: how are processes and procedures formally organised in the cluster?)

Multifunctionality requires specific organisational structures

The organisational structure of a cluster has to satisfy many requirements. As the number of partners cooperating in a cluster is steadily increasing, the organisation should be as flat (have as few hierarchical levels) as possible, and be transparent and operational. It should be supported by all members and make possible rapid and focused mobilisation of resources without overwhelming resource providers or being hijacked by individual members.

Another key requirement is the **ability to respond to the market** of the cluster and its organisation. In today's highly competitive and globalized markets, the structure must be capable of fast and high quality reactions to the various demands (rapid response capability). This is particularly the case for clusters with strong market orientation. The organisation must also be integrative and open enough to integrate a large number of different competence partners and actors, while at the same time remaining exclusive and selective enough to ensure stable cooperative structures and a high quality of the member firms (keyword: brand formation). The organisational structure is accordingly subject to conflicting pressures. This means that the **multifunctionality** of clusters can only be delivered by forms of organisation created specifically for this purpose. Adequate human resources are essential here for the functionality of the cluster.

The choice of legal and organisational form depends on the goals of the cluster (cf. section on strategy) and here specifically on the answers to the following three questions:

01. How closely do the partners in the cluster wish to cooperate?

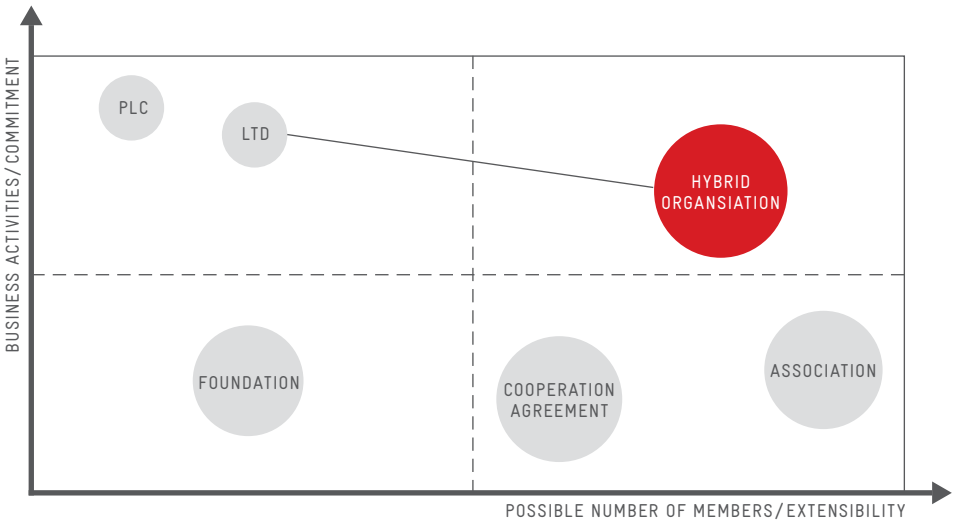
02. What is the role of commercial activities in the cluster?

03. How quickly should new members be integrated – exclusivity versus inclusivity?

Generally speaking, clusters whose primary goal is joint implementation of commercial activities need a different legal and organisational form, compared to clusters focusing on e.g. research and development. The rule is "**structure follows strategy**". **Some possible legal forms for clusters are:**

Structure follows strategy

- association (non-profit or for-profit)
- private limited company (Ltd)
- joint stock company
- hybrid forms (mix of association and private limited company)
- foundation



5. TOPICS

5.2. IMPLEMENTATION | 5.2.1. THE ORGANISATION: STRUCTURE AND SYSTEMS

Structure: who does what?

The important thing about the cluster's structure is to determine the competence and communication pathways, i.e. who in the cluster is responsible for what, and how information and messages flow between the various departments and members. **Classic structures with the following elements have proved their value in practice to date:**

- steering committee
- advisory board
- managing office (cluster manager)
- working groups

In any event it is advisable to formulate the structure of the cluster in a set of articles which are signed by all members and provide a binding basis for cooperation in the cluster. The **articles** should specify the legal form, goals, membership, rights and duties, as well as the organs and their functions.

Systems: how are processes and procedures organised?

By contrast, the **systems** are concerned with the working procedures, i.e. with how the **processes and procedures** are regularly organised within the cluster. Modern cluster management methods require thinking about procedures and processes which extend from cluster members to joint service provision to the market and customers. Flat organisational structures and increased process orientation make possible more efficient cooperation, greater **flexibility and more customer orientation** in the cluster (cf. section on project and process management).

Practical example:

The Software Internet Cluster SIC is an initiative by a number of software companies from Carinthia (Austria) with the aim of getting together to develop and offer the best possible products and services. The most important partners in the cluster are the Carinthian Chamber of Economy and the University of Klagenfurt. **The cluster is organised as a registered association and has the following organs:**

- General assembly
- Executive board
- Secretary-general
- Auditors
- Arbitration tribunal.

For further information on the Software Internet Cluster SIC, see www.sic.or.at.

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5.2. IMPLEMENTATION | **5.2.2. DEVELOPING AND OFFERING CLUSTER SERVICES**

Key questions

The four decisive questions

01. Why are services so important for the cluster?

02. What kind of cluster services are there?

03. How do I organise and structure the range of cluster services?

04. How do I market cluster services?

Key factors

Cluster services are of decisive importance for the success and sustainability of a cluster.

Cluster services are of decisive importance for the success and sustainability of a cluster. The cluster can only attract and retain members in the long term if cluster management succeeds in developing and offering services which address the **needs** and bottlenecks of the businesses. In this respect, cluster management requires particularly intensive and creative **customer orientation**, and a cluster's most important customers are the businesses. The earlier and more concrete the benefits to members are from using cluster services, the greater the appeal of the cluster. Businesses must feel from the start that they are at the focus of customer orientation, and can achieve concrete competitive advantages and additional benefits from cluster services, e.g. increased sales, greater productivity or quality improvements.

Another important aspect of cluster services is their use for **generating income and funding** the cluster, so that pricing should include adequate margins, if provision of the services cannot be covered by membership fees.

Depending on the specific industry emphasis, cluster focus and structure of needs, various cluster services can be developed. Accordingly, an initial demand analysis should be carried out in the preparatory phase (cf. section 3.1) and services should be also embedded in the strategy. **Experience to date in existing clusters has shown that businesses are primarily interested in the following types of cluster services:**

05. Marketing & PR

06. Export promotion

07. Vocational training and Continuing Professional Education

08. Applied R&D

09. Shared facilities (testing laboratories etc)

10. Tender information service (public tenders)

11. Joint procurement, sourcing

12. Joint projects

13. Human resourses services

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14. Policy action & lobbying

15. Financing, access to capital (venture capital, SME credits)

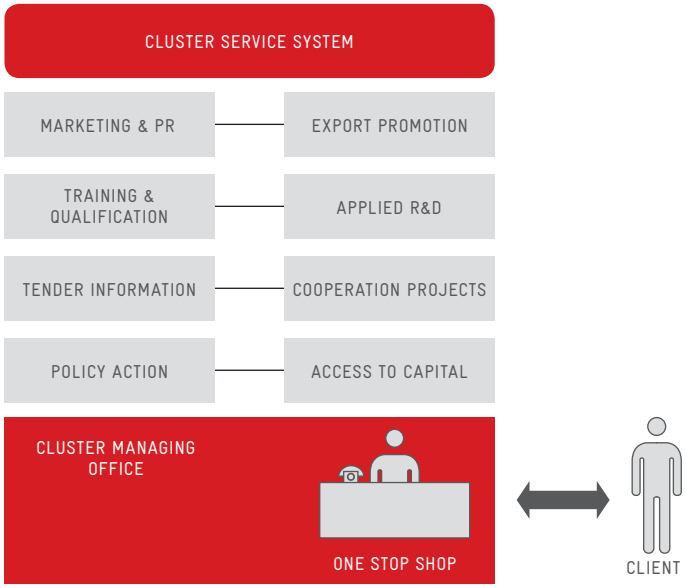
Creating an integrated cluster service system

The individual cluster services should be consolidated in **product and service groups** (see above). This makes it easier for the cluster manager to organise and market the services. Given corresponding demand and strategic importance, separate working groups can be formed for the individual services, e.g. export promotion, which then come up with a special service package and coordinate provision of services. **A product description or service profile should be developed for each cluster service (e.g. as a table) with the following information:**

- Product description
- Basic concept
- Target group
- Core service, customer benefits
- Suppliers
- Financing and resources
- Price policy
- Marketing

The cluster as a one-stop shop for cluster services

It is important to carry out research together with cluster members to determine which services are already available in the market and which must be developed and offered by cluster management (subsidiarity). Existing products and services should simply be integrated into the cluster's range of products and services, with special conditions negotiated with the providers for cluster members (demand bundling). The cluster managers should try to consolidate the various services in an integrated "**cluster service system**" for which the cluster management office acts as a sort **of "one stop shop"**.



Cluster services must be professionally presented and marketed

The first thing in marketing the services is to organise the range of services and make them as clear and appealing to cluster members as possible. **The following have proved particularly effective as marketing instruments:**

- Presenting the services on the cluster web site
- E-mail marketing
- Information on the services at cluster meetings and workshops.

Practical example:

The Russian software cluster RUSSOFT (www.russoft.org) has developed a specialist portfolio of services for its over 80 members, offering the following cluster services:

- Export promotion (trade fairs, road shows, delegation trips)
- Marketing & PR (website, online directory)
- Market studies
- International partner network
- Information events on technical topics
- Tender information service
- Quality management and certification
- Access to capital (Venture Capital)
- Lobbying (tax and customs concessions, trade fair promotion)

5. TOPICS

5.2. IMPLEMENTATION | **5.2.3. MANAGING CLUSTER PROJECTS AND PROCESSES**

Key questions

01. How important are projects for cluster management?
02. What is a project?
03. What is project management?
04. How do you organise and manage cluster projects?
05. What do we mean by a process or business process?
06. How important are processes for cluster management?
07. How do you define, model and implement cluster processes?
08. How do you ensure efficient process management?
09. How are process management and quality management connected?

Key factors

Project management

Clusters are project-oriented organisations

Cluster management requires professional project management

The structure and management of a cluster demand high quality teamwork in which numerous tasks and functions are handled by different cluster actors. Clusters are strongly **project oriented organisations** where concrete activities are mostly implemented in projects. This requires professional project management. Project management relieves cluster management and enables the cluster to achieve operational goals quickly and in accordance with its resources. It sets clearly defined, limited and manageable tasks and enables cluster members to handle important project work for the cluster in addition to their current daily business, jointly and in a goal-oriented way.

Definition of a project!

A **project** is a major, unique and complex undertaking, with several actors involved in its planning, management and implementation. Specifically, a project involves a large number of individual processes which together lead to the project result. For example, a number of different specialists have to work together as a team in building a house, with each of them handling specific partial tasks and processes so that a viable building emerges at the end.

Cluster projects: internal and external projects

Cluster projects can be defined as:

- **internal projects:** the project is carried out by participants for cluster members (internal customers)
- **external projects:** the project is carried out by cluster members for customers outside the cluster (external customers)

We can also distinguish between process oriented and goal oriented projects.

Project management in the cluster context

In the cluster context, **project management** can be defined as the planning, management and implementation of a unique and complex undertaking involving several cluster actors, with temporally and materially defined starting and finishing points. The goal of project management is to implement individual projects as punctually and in line with performance and resources as possible. With most projects there is a project executing entity which issues the project commission and takes the overall decisions, while the project management (project manager and team) are responsible for concrete project implementation.

The four aspects of **project management**

So how do you organise and manage projects as efficiently as possible in a cluster? **Organising cluster projects requires in depth consideration of the following aspects:**

- **Technical management aspect:** setting goals, planning, managing and monitoring project phases
- **Methodological aspect:** applying project-specific methods and techniques
- **Behavioural aspect:** project rules and behavioural rules for project participants
- **Organisational aspect:** rules on the project structure and procedures.

Project management in four phases

It is advisable when implementing a cluster project to split the project into several **phases** and deal with these in steps together with the project participants.

Phase 1: project start & definition

Clear goals are also necessary for project management

In the initial step, all the data relevant for the project is collected and analysed, and **project goals** are defined. Setting clear and realistic goals is very important for project management, as it sets the general approach. Project goals should be realistic, unambiguously defined and recorded in writing. When setting project goals we can distinguish between material, deadline and cost goals. All three aspects must be precisely formulated as early as possible. This is also the phase when the project participants or project staffs is identified. The data analysis is then used to generate an initial joint **project concept**, which acts as a basis for discussion and the project plan.

Phase 2: planning

Planning must be done jointly and supported by all

The planning phase should start with a meeting of all those involved in the project and should result in a **project structure** in terms of content and timetable. It is important to identify the individual **tasks** and divide these up. In addition, an estimate must be made of the work involved, the costs set and key interim goals (**milestones**) identified. To be able to measure subsequently whether the interim goals and project goals have been reached, indicators should be defined. A major point in planning cluster projects is agreement between all those involved that they will carry out the tasks they take on in a binding and punctual manner.

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Project **organisation**

The following tools can be used for project organisation:

- Structure, procedure and timetable planning
- Capacity, resource and cost planning
- Project matrix.

A simple but effective planning tool – the project matrix

The simplest approach is a presentation using a project matrix where the tasks of those responsible are assigned, inputs and outputs defined and deadlines set. The project manager is responsible for following up deadline overruns, as otherwise the cooperation will lose discipline.

Structuring **projects**

The following tools can be used to structure projects:

- Milestone plans / lists
- Networking schedules
- Activities plans

There is a range of useful **software** for facilitating planning and visualising the various tasks, activities, sequences, interim goals and timetables. For example, MS Excel can be used for project planning, or specific project management software such as MS Project.

The most important document for project management – the **project plan**

The results of the planning phase can then be summarised in an overall document, the **project plan. This plan includes the following elements:**

- Project description
- Brief description of the project executing agency
- Project manager, organisation
- Description of the project partners
- The initial situation and motivation
- Subject of the project, project goals
- Project structure, procedure and timetable planning
- Personnel and resources plan
- Cost and financing plan
- Timetable and work plan, project matrix

Operationalising the project in sub-projects and work packages

It is important in the project or project structure plan to break down the overall project into sub-projects and break these down in turn into sub-tasks. The sub-tasks or “work packages” then have to be broken down further into individual activities. It is useful here to draw up work package descriptions. Each work package should be clearly assigned to one individual, and the time and resources (costs) for them should be defined.

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Phase 3: project implementation

Two central management tasks: project organisation and project management

During project implementation, **two central management functions** have to be performed – concrete **project organisation**, and management of the execution of the work. The main tasks in project organisation are creating a goal-oriented framework for action, i.e. ensuring clearly defined obligations in implementation and creating a structure for communication. This is particularly important because every project is subject to a specific dynamic, and there may be changes over the course of the project. These need to be communicated to project participants quickly and transparently, in order to be able to respond appropriately. As far as **project management** is concerned, the primary tasks are coordinating the individual work packages, coordinating the participants, structuring concrete project communication, and motivating project participants. During this phase there must naturally be ongoing **project controlling**, in the form of a comparison between actual and budget figures, carried out by the project manager. With very extensive projects, controlling can be done by separate controlling teams. Project controlling covers monitoring project progress, costs, and time and quality tracking. However, controlling should also enhance the ability of project participants to reflect and provide feedback to enhance project management skills (keyword: self-organisation capability). Particularly important for project management are **regular project team meetings** for face-to-face sharing of information, communication and progress control. These meetings are also important for team building, as they promote group coherence.

Trust is good – project monitoring is better

Project team meetings: information, communication and team building

An important instrument for project implementation is the project plan or project matrix mentioned earlier, as this serves as a guideline and gives all participants an exact overview of the status of the project.

Another important point is to ensure up-to-date project documentation, which makes it possible for individual team members to coordinate their work and ensures a uniform level of knowledge within the group. The principle is that the status of documentation should always match the status of the project. Project documentation covers documentation of both the progress and the results of the project. The reporting system required for documentation should largely follow the structure of the project plan.

Up-to-date project documentation so that everyone in the team knows what they need for their job

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Phase 4: project completion

Project completion should be defined in qualitative and quantitative terms in the project plan (goal attainment). The project can only be regarded as complete if 100 per cent of the defined project goals have been reached. In any case, after completion of a cluster project the individual project phases should be jointly analysed and evaluated. What worked well, what less well, what were the reasons, and what can be done better in the next project (lessons learned)? Project documentation (project progress reports, final report) play an important role in this. An internal cost analysis should also be included in the final phase. The last step is to wind up the project and project group.

The project can only be concluded once the project goal is 100% met

The project manager has a central role in project management. **The most important tasks for the project manager are:**

The **project manager's** tasks

- Overall coordination and management of the project team
- Project planning and controlling (performance, deadlines, costs)
- Leading the team, i.e. goal-oriented assignment of project participants
- Motivating project participants
- Allocating and distributing resources
- Moderation
- Representing the project, internally and externally
- Project communication (internal, external)
- Project administration and documentation

The project manager should be chosen on the basis of project experience, technical knowledge (project content), communication and management skills, ability to work under pressure and flexibility. With major projects, a separate project steering committee can be formed. Generally, however, this function is performed by the cluster steering committee, which supervises the project manager and project team.

Selection criteria for a project manager

Team size and composition

Project management is an interdisciplinary activity which can only be efficiently handled by a team. The exact membership of the team depends on the content of the project. It is a matter of finding the right mix of people with the necessary technical, methodological and social competence. All team members should see themselves as full and equal members of the project, to ensure identification with the project and the emergence of an "internal identity" (cooperation and cohesion) in the group. The size of the project team depends on the scale of the project. Normally, a project team should have at least three members. Project team sizes of 3 – 7 have proved to be optimal in the past. **The central functions of the project team include:**

Tasks of the project team

- Autonomous completion of work packages
- Attendance at project team meetings
- Structuring the relationship with other project members and project manager (information and communication)
- Project documentation for assigned work packages.

Using working groups for project work

In many clusters, concrete operational activities are carried out in **working groups** (cf. section on organisation) which are responsible for specific areas (e.g. export). Depending on the content of the project, it may accordingly be helpful to use these existing structures for project work. This has the advantage you can call on existing project structures and an established team.

Behavioural rules for successful work in the project team

There are several behavioural rules for project implementation which all project members should observe:

- It is as important to listen as to speak.
- Conflicts and problems should be openly expressed, discussed and solved.
- Documentation of working and discussion results should be done and disseminated.
- All project documents and information are accessible for everyone all at all times (open files).
- Responsibilities are unambiguously defined.
- Approaches are discussed, decided upon and then followed by all.
- All members are full and equal project staff.
- Open and transparent information and communication structures are provided for.

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Process management

Definition of a **business process**

The question first arises what we actually mean by the term process or **business process**. Applied to the cluster context, we can **define** the term as follows: A business process is a chain of functionally linked activities with the aim of meeting requirements of internal and external customers.

Types of process

We can distinguish here between the following kinds of processes:

- **Management processes:** these are processes in the area of strategy, planning and management, i.e. processes in the field of strategic cluster management
- **Core processes:** these are processes associated with production within the cluster, i.e. specifically cluster services
- **Support processes:** this kind of process involves providing the infrastructure and resources needed for the organisation.

Other types of processes which are particularly important for a cluster are learning and information processes (knowledge management).

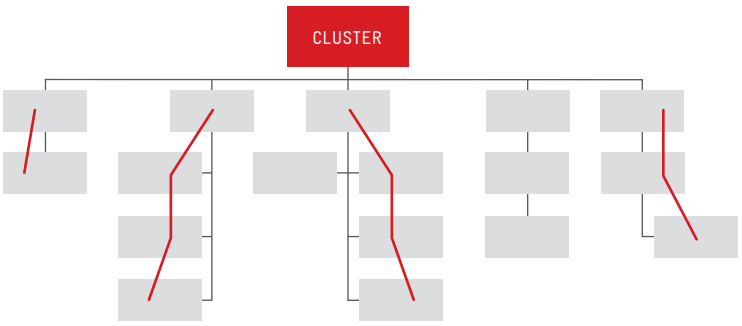
Process levels: primary processes and sub-processes

Depending on the level of hierarchy and aggregation, these various kinds of processes can be broken down into **primary processes** and **sub-processes**.

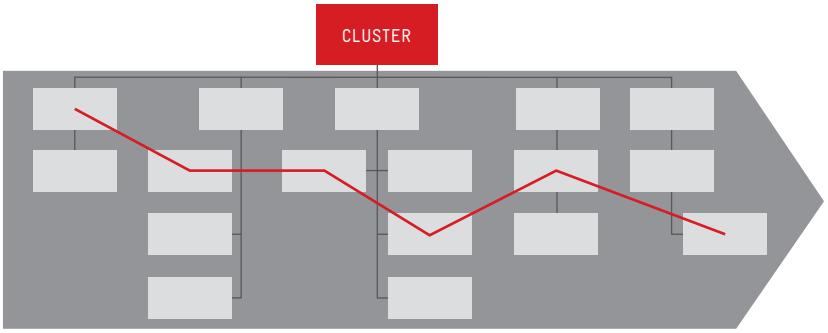
From functional orientation to process orientation

The importance of process management has increased significantly in recent years. Globalisation, technological programme and the transition to a knowledge-based economy (KBE) have all resulted in growing complexity in market conditions and individual customer wants. In this highly competitive and dynamic environment an institution organised in terms of purely functional departments will quickly reach its limits, with growing interface problems and friction. This has led to a shift in paradigm from **functional orientation** to **process orientation**.

Functional orientation



Process orientation



This paradigm is naturally even more important for clusters, as here it is necessary to coordinate a number of often very heterogeneous businesses, institutions and structures, which are also legally autonomous. The problem of interfaces and vested interests is accordingly even more proponent than in the case of a single business. Besides project management, process management is another key element in cluster management. Every cluster needs **clearly defined processes** which are jointly implemented and experienced. This creates efficiency and transparency for both internal and external cluster customers. Inside the cluster, process orientation promotes thinking in causal relationships, synergetic advantages and global optima. There is accordingly also a close link with the concept of the integrated value chain.

Efficiency and transparency in cluster management through process orientation

In the context of cluster management, process orientation offers the following specific advantages:

Advantages of process orientation

- Market and customer orientation
- Greater efficiency and economy
- Holistic thinking in cooperative structures
- Better coordination and cooperation
- Improved integration of value chains
- Flexibility and response capability
- Fewer interfaces between cluster actors
- More efficient (lean) cluster management
- Transparency
- Quality management (process orientation as a starting point for quality management – QMS – and certification)

5. TOPICS

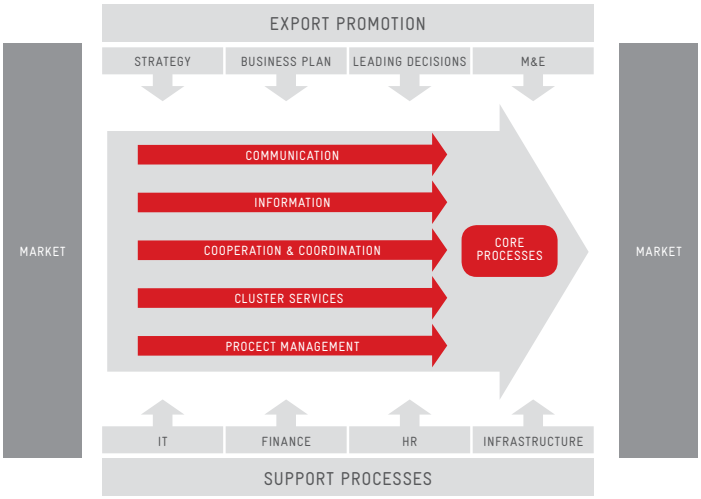
5.2. IMPLEMENTATION | **5.2.3. MANAGING CLUSTER PROJECTS AND PROCESSES**

Introducing a process management system in five steps

The question that arises now for the cluster manager is how to introduce professional process management in the cluster. If there is no process management system in the cluster as yet, i.e. the individual processes still have to be defined, an introduction in five steps is recommended:

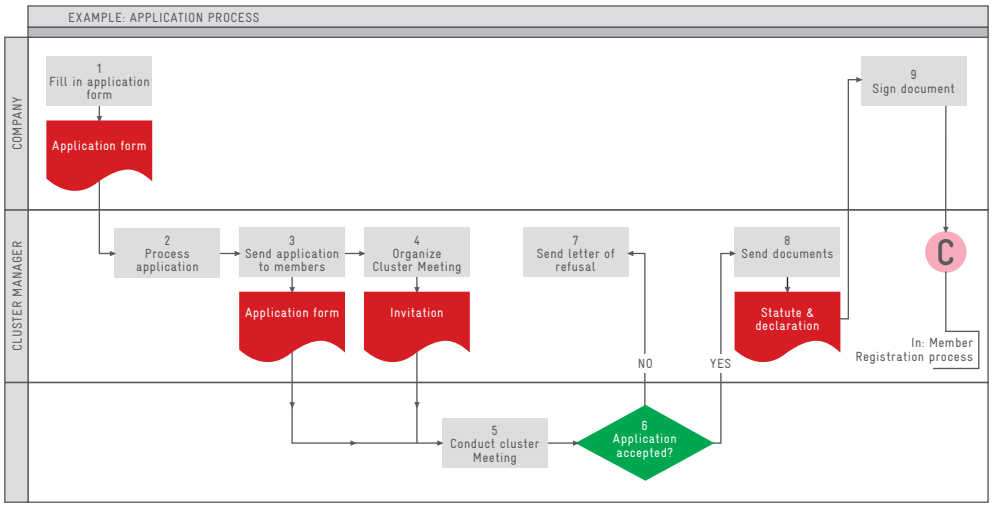
01. **Develop a cluster process model** in which the cluster's central management, core and support processes are determined. The focus here should be on market and customer orientation, and the processes should be aligned accordingly.

Cluster process model



02. **Develop target processes**: the task now is to develop and model the individual (main and sub processes on the basis of the cluster process model. For this, the first activity is to determine the start and finish of each process, the actors or functions involved, and the structure of cooperation (who is working with whom?). Next, the individual process steps or activities (e.g. send application form) are assigned to the responsible functional areas (e.g. cluster manager) in temporal and logical sequence. There are standard symbols (operation, data, decision) and modelling conventions (process flow from left to right or top to bottom) for visualising the process. A "process owner" should be designated for each process with responsibility for the process flow and results. Practical experience has shown that it is best to start by developing the target processes for the cluster services, as these have central importance for the cluster (customer orientation, generating income)

Example: application process.

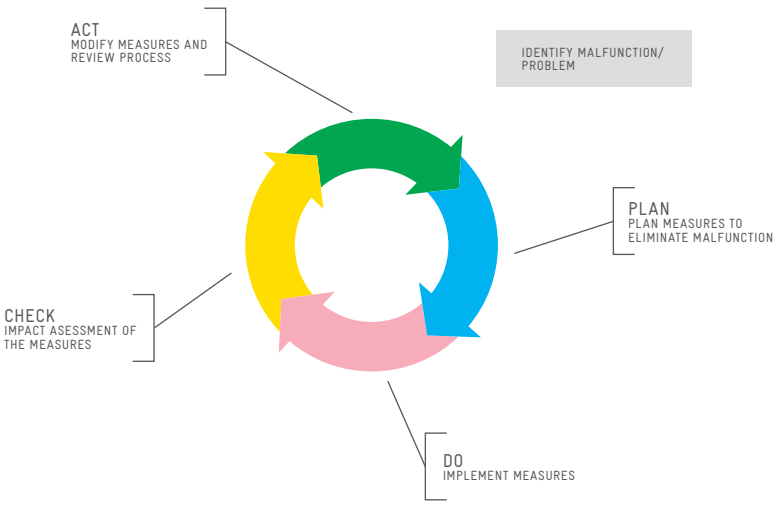


03. Process documentation: the next step is to describe the target processes which have been developed and document them in writing (process description, management manual).

04. Process implementation: the process must now be introduced into cluster management and prove its value in practice. The important aspect here is for the processes to be implemented consistently by all participants, following the steps as required.

05. Process optimisation: cluster structures, market and customer requirements all change. This means that the processes must also always be subject to critical review, and revised or optimised wherever necessary (permanent improvement process – PIP). The process management system accordingly needs to be flexible and adaptable. Success indicators must be defined to check and evaluate the business processes. Suitable indicators include customer satisfaction (internal and external customers), quality of services, time inputs and costs.

Permanent improvement process (PIP)



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5.2. IMPLEMENTATION | **5.2.3. MANAGING CLUSTER PROJECTS AND PROCESSES**

Process management in team work

Introduction of the process management system as a whole should be participative, i.e. all the relevant cluster actors should be included in this task or individual steps with the help of workshops.

Approaches to **process optimisation**

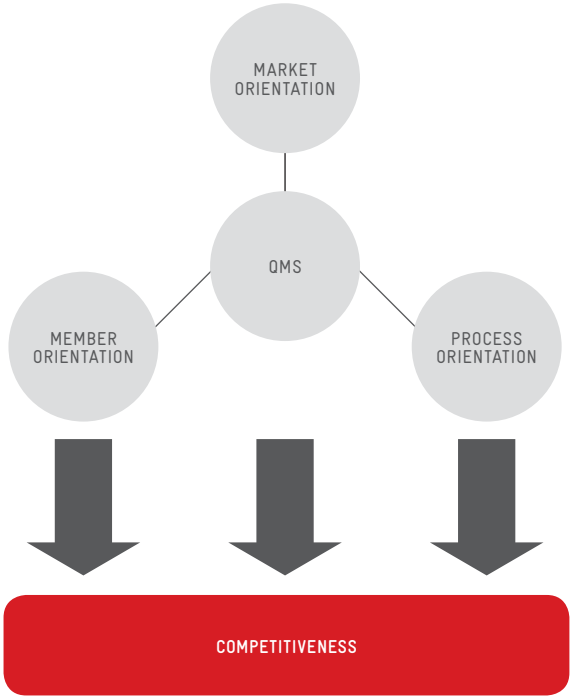
The importance of control and permanent improvement of processes has already been noted. **The following approaches are available for optimising existing processes:**

- Reducing interfaces
- Integrating functions
- Integrating responsibilities
- Integrating tasks
- Simplifying
- Outsourcing
- Introducing standards
- IT support
- Reducing division of labour
- Integrating teamwork
- Reducing control functions
- Increasing decision-making authority

A comprehensive quality management system (QMS) is based on the following fundamental elements:

- Customer and/or market orientation
- Member and/or employee orientation
- Process orientation

There is accordingly a very close relationship between process and quality management. Process management is an integral component of quality management.



Without clearly defined and documented processes, for example, the quality of the cluster's services to its internal and external customers cannot be assured, threatening the competitiveness of the cluster and its members.

The development of a process management system can also be very attractive to a cluster as if significantly facilitates subsequent introduction of a quality management system and certification to ISO (the process management system is a key element of the quality management manual). This can be a very interesting aspect for the strongly export and sales oriented cluster in particular.

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5.2. IMPLEMENTATION | **5.2.4. ATTRACTING AND BINDING PARTNERS**

Key questions

The six decisive questions

01. Does the strategic alliance have the right partners or are important ones missing?
02. Are the partners contributing resources in proportion to their strength?
03. Is there a balance between the obligations on the partners to the strategic alliance or the cluster and the services provided to the strategic alliance or the cluster to the partner?
04. Are there different groups of partners, and are these groups clear and functional?
05. Is the cluster sufficiently known and appealing to new partners?
06. Are different and agreed forms of attracting partners used?

Key factors

Are close relationships in the core group enough?

Strategic alliances usually arise on the basis of professional or personal contacts. Often there is a strategic alliance core with people who have already had good experience of alliances and established mutual trust. But is that enough for a successful and sustainable strategic alliance.

A (written) strategic alliance concept with goals, SWOT, measures and resources is needed to show what competences the group is lacking. This phase should be given special attention in every strategic alliance, to avoid "lock-in" effects.

Carry out specific comparative analysis of the necessary and available competences

New partners can then be sought on the basis of an exact gap analysis. Attracting partners for strategic alliances is always more a matter of personal discussions, because this is the only way of establishing an atmosphere of trust.

It is usually simpler to attract partners for larger networks and clusters. These do not involve a concrete cooperation project, but rather a range of different activities which permit different forms of intensive participation.

Make provision for different intensities in partnership

The important thing for networks and clusters is that they make possible different forms of partnerships and participation. These different forms can be spread over time:

In the initial phase of the cluster, there are possibilities of "**trial partnership**" in which the partners need only issue a declaration of intent to cooperate. This merely commits them to disclosing specific business information.

Only after a specific period in transforming the partnership do they assume obligations specified in the strategic alliance agreement, such as membership fees, providing information and know-how, possibly liability and similar commitments. For this, genuine partners receive exclusive services and information from the cluster, or they get special conditions.
Although strategic alliance and clusters require formal rules and agreements between the partners, the mutual tie is not primarily the result of the formal facet of cooperation. Informal and living processes are always more important for binding partners and integrating them into the strategic alliance or cluster than mere formal rules.

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5.2. IMPLEMENTATION | **5.2.5. CLUSTERS NEED INNOVATIVE THINKING!**

Key questions

The ten decisive questions for advanced training and innovation

Managers and employees with the ability to cooperate are an important key for success within clusters. **The following questions are particularly relevant:**

01. Is innovation practised as a comprehensive concept including technical, organisational and communicative competences?
02. Do the partner businesses have advanced training measures to promote the ability of managers and employees to cooperate?
03. Are the businesses successful in making newly acquired knowledge and skills of their managers and employees available to the whole business through training and advanced training?
04. Is there a common advanced training concept for cluster partners?
05. Is advanced training jointly developed and implemented in the cluster as a strategic priority?
06. Is a review of needs carried out for all employees as a basis for advanced training?
07. Are knowledge and acquisition of knowledge adequately documented and available to all partners and their employees?
08. Is the success of advanced training regularly evaluated?
09. Are leading international figures sufficiently engaged for advanced training in the cluster?
10. Are there enough opportunities for open exchange of informal knowledge and news?

Key factors

An edge in knowledge ensures competitive advantages

The decisive competitive advantage for the future is knowledge and competence of managers and employees in the businesses and the supporting organisations of the cluster. This is important because innovation in all areas (technology, design, marketing, organisation, management) requires creativity, knowledge and relationship skills on the part of all the employees involved.

Managers who “only” procure and control are accordingly just as deficient as employees who “only” work well.

However, knowledge and its generation are not static, but the result of an interactive learning process between researchers and users, in interplay with global electronic networks.

We can usefully distinguish between different forms of knowledge:

Codified and uncodified knowledge are equally important

Codified knowledge as accessible knowledge which can be saved on data storage media and transmitted all over the world, such as research results on a topic relevant to a cluster.

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And **tacit knowledge**, for example the knowledge used by a designer with years of practical experience which is constantly being honed by experience but is often very difficult to express and codify ("we know more than we can tell"). Such knowledge can generally only be transferred in close social contact with the source, and the transfer requires social skills and relationships with the specialists (personal contacts, courses, seminars, Internet) to utilise their expertise.

Preparing knowledge maps

Knowledge maps provide an overview of the knowledge available in the partner businesses, together with the potentials and their distribution.

In this situation, qualification as a process for upgrading human capital through consulting and education takes on high priority. Competitive qualities need high-level qualifications, which in turn require well-conceived qualification opportunities.

New qualification requirements

The conditions for success in today's turbulent markets – national and international – have changed considerably. In times where selective market development strategies and quality are demanded from many different directions, the **needs of qualification** have to be taken into consideration at all stages of the value chain. **The main implications are:**

- Standard solutions are less and less possible; specialist businesses increasingly need individually developed solutions.
- Technical specialisation must be combined with an integrative approach networking with all areas required to deliver quality. This demands a communication strategy with partners which goes beyond the purely technical sphere, and/or their involvement in training measures for consultants etc.
- The increased demand for technical specialisation is a result of the specialisation of producers. Concentration on business core competences in production involves greater entrepreneurial risk. Accordingly, management and financial issues are becoming more and more important.
- Greater attention to market information is required, i.e. information on quality demands by customers – whether consumers or marketing partners – which go beyond the controlled guidelines. This becomes increasingly valid the more the respective markets are dynamic and competitive.
- A good understanding of quality trends and knowledge of the strengths and weakness of producers and suppliers is indispensable.
- Competitive and innovative products require rapid implementation of research results. This in turn means staying abreast of scientific research trends and developments and being able to put research early into practice.

Learning from the best …

These challenges mean that clusters need a qualification system with multiple components. First, it involves a qualitative **technical lecture and discussion programme**, based on an assessment by the leading businesses and research institutes of what will be needed in the next few years. A review of the needs of the cluster businesses for qualifications is another important input into this technical programme.

and
learning from each other

However, a cluster also needs a very open, interactive and relations-based **network learning forum** which can be flexibly configured by the actors themselves. In such an open learning system there are no planned programmes of events – every member can take the initiative and submit a personal **learning module within the framework of the network forum**. The initiator assumes the role of a **broker** here, putting a short description of the content, format and first date for the desired module on the cluster website (intranet). If more than a predetermined minimum number of people register for the event, it is prepared and held with the help of cluster management or cluster support. All the results are documented on the intranet using a uniform and simple system, and are accordingly available to all cluster partners.

These fora offer a lively and connective form of learning and in addition to the increase in knowledge they are an outstanding means of establishing trust and preparing for joint projects.

Here, for example, are guidelines for promoting an innovation-friendly climate for knowledge in organisations and networks:

- Failures are tolerated. Efforts count as well as success.
- Anybody can contribute ideas, regardless of their position and status.
- We are prepared to take risks and accept failures.
- We promote an innovative business climate for every single employee.
- We believe that only change is permanent.
- We promote diversity; performance counts for more than rank and contacts.
- We stand by our products and services.
- We don't let new ideas moulder in the filing cabinet – we test their potential for implementation as quickly as possible.
- In new projects we also use the competence of outsiders.
- We believe in every individual's success.

5. TOPICS

5.2. IMPLEMENTATION | **5.2.6. SUCCESSFULLY INFORMING AND NETWORKING CLUSTER PARTNERS AND CUSTOMERS**

Key questions

The six decisive questions

Communication plan as the basis

01. Is there a communication plan showing target groups ("who do we want to reach?"), goals ("what do we want to achieve by this?"), media ("how do we reach the groups?") and times ("when and how often do we want to inform and network?").
02. Do the responsible parties in the cluster or strategic alliance implement the communication plan?
03. As there a clear allocation of tasks, showing who is responsible for which communication activities internally and externally?
04. Are partners and customers regularly asked about their opinion on the benefits and quality of the information they are getting from the strategic alliance or cluster?
05. Are different and complementary formats and media used for information and networking?
06. How can information and communication between cluster partners be improved by using modern IT solutions?

Key factors

Clusters need professional information work

Information work and PR are fundamental for the success of clusters. Strategic alliances with a small number of businesses still need information and networking, but the system of target groups to be included is smaller, so that the media solutions can also be smaller.

Clusters as open and learning networks often have over 100 different partners, and need a rich and clear information basis to be internally integrative and externally attractive.

It must be target group specific …

As clusters include both businesses and public institutions as well as a large number of different stakeholders, communication has to take into account the different expectations and habits of the various target groups.

- Businesses generally expect information to be very brief with a clear benefit.
- Administrative entities and politicians usually want information which presents their own contributions in striking and visual form.
- Promotional agencies need information with documentary nature, showing activities and results.
- Regional developers and officers with responsibility for a location look for information providing an overview which shows the quality of the location.
- The media expect stories which are brief, striking and personal.
- Practitioners want access to data they can turn into information (and knowledge) for their own purposes.
- Evaluators need information on development and results in the form of indicators.

An information system which meets target group needs and offers diversity is needed to satisfy these different requirements. Without a clear communication plan jointly drawn up or supported by the core partners, there can be no professional information policy. However, as strategic alliances and clusters generally have very limited resources for communication, it is necessary to set priorities for the goals and target groups.

...and aim for clear information goals

The goals should be split into short and medium term goals for each target group, and formulated in such a way that they can actually be checked. Regular checking of how far goals have been achieved is the only way to improve information work continuously.

Media mix important

In implementation, the right media mix also plays a decisive role. Here, it is particularly important to start from the target group's expectations and habits and not from those of the people responsible for information in the cluster or strategic alliance. For example, the Internet and intranet are media which are more suitable for professional users than for SMEs or politicians.

Written and personal information

It is also important to strike a balance between written and personal access to information. If there is too little face-to-face information, the integrative action of a strategic alliance or network quickly fades, and it is not possible to establish trust.

Information quality helps cluster brand formation

The question of quality and design must also be taken very seriously. Ultimately, information and communication are one of the most important means of establishing and maintaining a brand. Every (long term) strategic alliance and cluster must be perceived as a brand in order to establish its uniqueness.

Cluster management and ICT

Central applications of ICT in cluster management: information, communication and cooperation

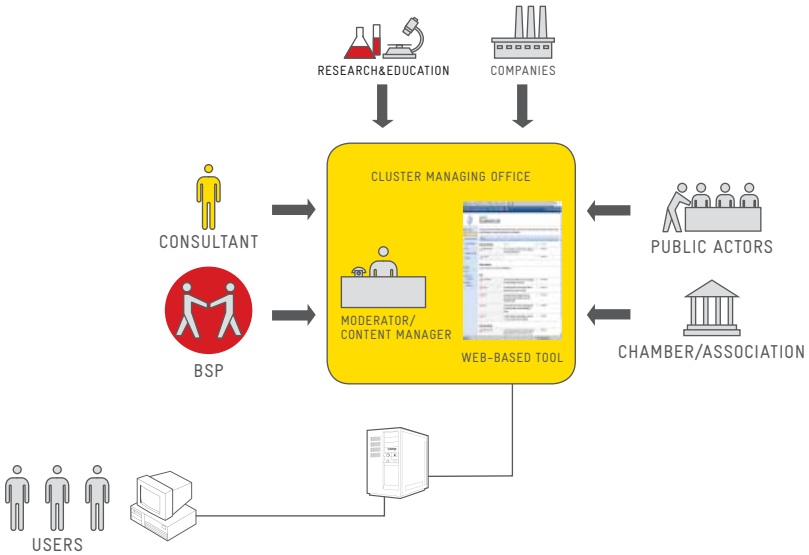
Modern ICT solutions – particularly the Internet – offer numerous possibilities for supporting and enhancing the efficiency of cluster management and the associated processes and activities. **Three central areas of application of ICT in cluster management are:**

- Information
- Communication
- Cooperation

5. TOPICS

IT as tool for knowledge management in the cluster

Information and knowledge are not only factors of production but also factors for competition and success. The preparation, storage and presentation of relevant information to members accordingly play a particularly important role in innovation-oriented clusters within knowledge intensive industries (keyword: learning organisation). IT is an important element in the knowledge management system of a cluster, which is primarily concerned with managing organisational knowledge. Organisational knowledge is knowledge which is associated with a community or group, rather than a specific individual. It arises through interaction and pooling of information between the individuals within an organisation or cluster. The central added value process here is the transfer of individual knowledge to collective knowledge, and vice versa. IT acts here as an infrastructure and platform for providing information and networking cluster actors. It offers the necessary storage and processing capacity, making it part of the organisational memory.



IT & communication

The cluster's **communication** can also be made more efficient and effective by using IT. This applies to both internal communication with cluster members and external communication to media (PR) and customers (marketing). A range of new IT programs and technologies make possible not only the classic one way communication (sender-recipient) but also interactive communication between several actors.

Collaborative software helps with cooperation and coordination

ICT has central importance particularly in supporting **cooperation and coordination** within the cluster. The special structures (multifunctionality, heterogeneity) of clusters pose extremely high requirements for cluster and project management. Collaborative software, also known as groupware, can help implementing joint projects and processes in ways which are not only more efficient but also more transparent.

Some important points

When using ICT in cluster management, the following points should be considered:

- First, it is necessary to communicate to cluster members the specific advantages of the relevant IT systems not only to the cluster but to their own businesses (awareness).
- A suitable IT infrastructure (hardware and software) must be procured based on the concrete need of the cluster and its members rather than on technological possibilities.
- It must be determined who is responsible for providing and maintaining the IT infrastructure. Often, it is more cost effective to outsource these services to an external service provider.
- Training is needed to enable all participants to use the services provided.
- It must be decided who enters what information when into the system (administrator, moderator).
- It must be decided who has what kind of access to information and functions (roles).
- The information and communication flow between cluster members should be structured as openly as possible.
- Just like clusters themselves, IT systems are particularly successful if the driving force is not a single individual or business but an intrinsic force emerging from the desires and concrete needs of the members.
- Even the best IT structure can never replace personal communication and (face to face) inteaction between cluster members.

IT packages for clusters – an overview

The central question now is **which IT package**s are most suitable **for which applications and functions?** The following section describes some tools, together with links where additional information can be found.

The classic: websites

The **website** is the Internet presence of an organisation (e.g. a cluster), mostly assembled from a number of documents (files, resources) which are linked by a uniform navigation system (hypertext). Websites are primarily written in the platform independent display language HTML or XHTML, to ensure that it can be displayed on as many computers as possible. Websites are a classic tool for the cluster's external communication. Cluster websites can be created at comparatively little expense, although great importance should be given to professional design and search engine optimisation (SEO), to ensure that the website is easy to locate for potentially interested parties. The use of websites for cluster management is essentially limited to external presentation. However, the functionality of a cluster website can be supplemented by communication and information. However, this requires considerable additional technical and financial resources.

Professional design and SEO

5. TOPICS

Groupware

Collaborative software or **groupware** is software which supports cooperation in a group over time and space. Groupware is particularly suitable for managing complex joint projects and group processes, such as the ones which often arise in clusters. It can be used as a tool or platform for storing and providing information, and also for internal communication and coordinating cooperation. **Most groupware has a web-based interface with the following functions:**

- documents
- messages
- announcements
- events
- links
- tasks
- calendar
- surveys
- discussion board

Groupware comes in both commercial and freeware form. **The best-known packages are:**

MS Share Point: http://www.microsoft.com/windowsserver2003/technologies/sharepoint·

OpenGroupware.org: http://opengroupware.org·

PHPROJEKT: http://www.phprojekt.com·

eGroupWare: http://www.egroupware.org·

Simple Groupware: http://www.simple-groupware.de

Wikis & knowledge management

A special form of groupware is the so-called **wiki.** This is a collection of pages available on the Internet which users can not only read but also edit online. Wikis are similar to content management systems. However, for cluster management wikis are only suitable as a knowledge management tool, as they do not offer the additional functions in the packages listed above. Further information is available at: http://en.wikipedia.org/wiki/Wiki

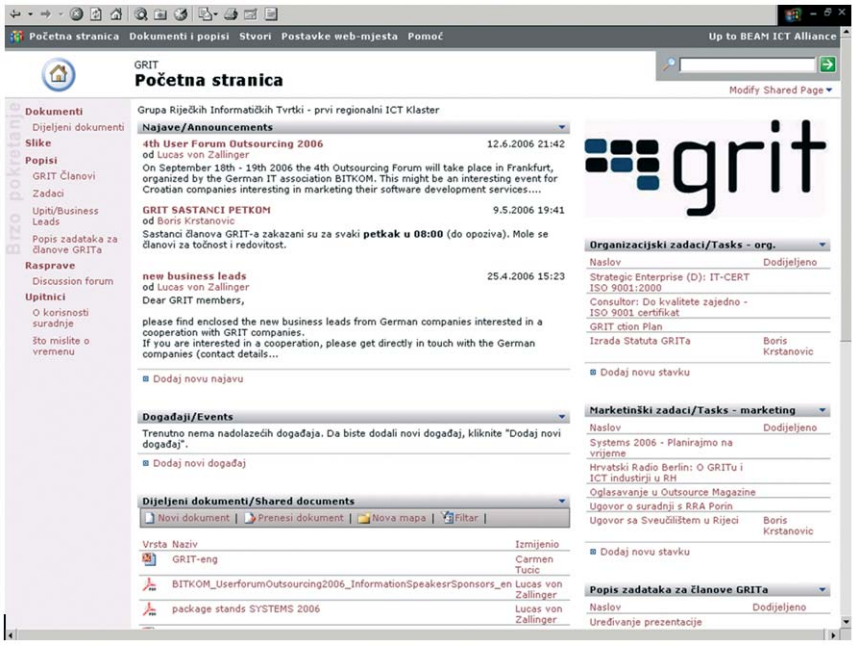
E-community platforms

E-community platforms on the Internet were developed to give specific groups of interested parties the capability of communicating and sharing experience via the Internet. Such platforms offer their users basic functions such as messages, files, links, database, polls, membership list, diary. The best-known e-community system is Yahoo Groups: http://groups.yahoo.com. The system is free and is already being used by several software clusters in eastern Europe as a communication and cooperation tool. The drawback of Yahoo Groups is the shortage of storage available.

Practical example: Croatian Cluster Network (CCN)

The Croatian Cluster Network (CCN) was developed under the GTZ project promoting Croatian clusters. The main task of the system is to promote the flow of information, communication and cooperation between Croatian clusters and also within the individual clusters. Each cluster has its own groupware application which cluster members can use for internal cluster management.

Free groupware application for Croatian clusters: CCN



5. TOPICS

5.3. CHANGE | **5.3.1. MONITORING AND EVALUATION**

Key questions

The seven decisive questions

01. Has the cluster reached its goals in terms of the desired result, costs and deadlines?
02. Have those responsible enough information to measure the cluster's performance and success?
03. Are all relevant stakeholders satisfied with the results?
04. What has gone well, what not well?
05. How do the partners and other important stakeholders evaluate cooperation within the cluster and cooperation with customers and important interest groups?
06. What general conclusions do partners draw from the work for planning and implementing future projects or the future work of the cluster?
07. Do cluster partners appreciate enough the successes achieved?

Key factors

Evaluation is systematically checking goal achievement and impacts

Evaluation is a regular check (documentation and reflection), mostly at the end of a project phase. Leading questions are whether the goals of the strategic alliance or cluster are still realistic, whether the chosen approach is the right one to achieve the goals, and what can be learned from experience to date.

Evaluation can also be a response to an acute problem situation (crisis), for example if deadlines are massively overshot, if the actual costs differ sharply from the budget, or if there is dissatisfaction.

In many areas, including clusters and strategic alliances, a "culture of evaluation" has grown up in recent years as people have recognised that an independent review of events provides valuable information for improving the activities.

We distinguish here between external and internal evaluation.

External evaluation – the view from outside

For an **external evaluation** an evaluator or evaluation team is commissioned from outside the business or cluster to carry out the evaluation. The content and methodology of evaluation are defined in the commission. Mostly, cluster evaluation uses a mix of quantitative and qualitative interviews with representatives of the various stakeholders and an analysis of written planning and reporting documentation. The results are sent to a cluster management team which draws conclusions for the next phase of the project. In many evaluations, workshops are held with a large number of cluster actors to enhance acceptance of the results and motivation for implementing the conclusions.

A frequent criticism of conventional evaluations is that they are too control oriented and concerned with the past. However, **evaluation as control** is not generally very oriented towards action and change. The evaluated cluster system then tries to emerge from the evaluation with as little damage as possible, and fails to use the evaluation as a learning opportunity.

Internal evaluation – a tool for learning and improving

As a result, the idea has gained ground in recent years that **evaluations are a learning tool** for cluster managers. **Internal evaluation is better suited for this purpose:**

- Internal evaluation is a solution-oriented methodology which aims to enhance the competence of those being evaluated to learn from the experience.
- The point here is accurate diagnosis of the strengths and weaknesses from the point of view of the relevant stakeholders, and specific identification of starting points ("levers") for effective change.
- Evaluation aims at supporting learning and the strategic response capability of actors in the evaluated system.
- Evaluation should accordingly be structured as an interactive and implementation-oriented learning process.

Recording the most important information and data in a monitoring system

An important basis for evaluation is information on the course and results of strategic alliances and clusters which has been systematically collected and stored. The choice of the information to be recorded depends on which indicators are defined as critical for the course and success of a strategic alliance. **This information system is also described as monitoring:**

Problems in evaluating strategic alliances and clusters

Clusters and strategic alliances are highly complex, so that conventional analysis of results often fails to supply usable information. Monitoring using previously set parameters is often left behind somewhere along the way, so that little useful data is available when the evaluation comes up. There are several reasons for this:

- Monitoring still gives priority to quantitative, independent indicators, although the necessary qualitative information for understanding the effects is lacking.
- Monitoring and reporting are focused on activities and direct results (outputs), which overly emphasizes short term aspects and neglects long term processes, although the latter are usually much more important for achieving goals and effects.
- There are currently hardly any indicators which are suitable and generally recognised for eval ating the effects of clusters, with a lack of both solidly established methodological foundations and practicable tools for monitoring effects.
- Evaluation is usually taken up too late so that it is impossible to use information directly to improve the situation.
- Evaluation is generally done on commission for the promotional entities, without dialogue with the project executing agencies, so that the conditions for a top-down control are met, but not for joint learning from experience.
- Effects of regional alliance projects and clusters are the result of highly diverse internal and external influences, and it is very difficult to identify clear and unambiguous relationships. The temptation is particularly great here to credit the cluster with resulting effects, whether or not the cluster can demonstrably be shown to have contributed to them.

5. TOPICS

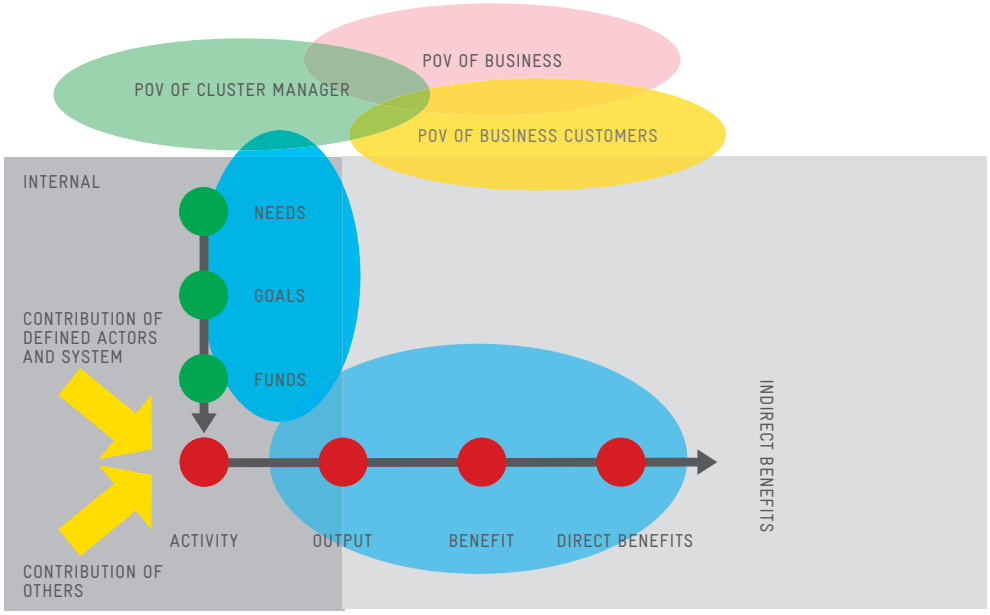
5.3. CHANGE | **5.3.1. MONITORING AND EVALUATION**

As a result – starting in the field of development cooperation, where conventional evaluation methods very often fail – an instrument has been developed in an effort to overcome these deficiencies: Impact oriented monitoring.

Impact monitoring

Impact oriented monitoring is a process for project management. With its help, information is collected on processes which is relevant for achieving results – and consequently for impacts.

Impact monitoring focuses on those factors which the project can directly influence. The emphasis here is on those areas which are decisive for achieving results: the quality of implementation of activities, organisational procedures and processes, changes in the behaviour of partners and target groups.



Approaches to impact monitoring

Impact oriented monitoring is implemented as follows:

- First, the participants define the scope of impact and the results and impacts they anticipate.
- They use this to derive impact hypotheses for the relationships between the project, the observable processes and the expected results and impacts. Then, the actors determine areas for monitoring where they define mostly qualitative indicators and milestones for monitoring behaviour processes (Behavioural changes for whom? To what extent? By when?). During the project, the relevant data is collected and continuously interpreted. The conclusions are fed into the processes directly as corrections.

This process is used for holistic strategic monitoring of the areas decisive for achieving results. It is dialogue-oriented, and the results of monitoring can be simply displayed graphically. This makes it very suitable for participative procedures, e.g. in the form of workshops with the implementation partners.

Frequent errors in evaluation

Evaluation errors

Planning and conception of cooperative projects are unrealistic and / or incomplete. This deficiency is supposed to be subsequently resolved by exaggerated or wrongly selected controlling tools. In fact, this merely makes projects even more complicated.

Timetabling is done not on the basis of realistic assessment of the work required, but on the basis of deadlines set in advance, which in most cases are guided by wishful thinking.

Strategic alliance planning and controlling are done by different people; there are problems of understanding and conciliation between customer, management and project team, given the lack of a common language.

Constant turnover within the core teams also leads to communication problems, particularly if project documentation is only sporadic or incomplete.

Evaluation is useful for coming to terms with the past, which opens up the risk of limiting freedom of action in the future, instead of identifying resources for high quality project results.

Evaluation is done sporadically, rather than regularly. As a result, the benefit of evaluation is mostly only recognised if serious threats arise to ongoing cooperation.

There is no clear conclusion or clear milestones for joint projects. Projects are then continued endlessly, or they vegetate – mostly because the desired result fails to appear.

The insights from the evaluation are not used for the next project or phase of cooperation in order to benefit of past experience.

5. TOPICS

5.3. CHANGE | **5.3.2. CHANGE MANAGEMENT**

Key questions

The eight decisive questions

01. Are there enough capacity and awareness of change in the strategic alliance or cluster?
02. Are there enough opportunities and encouragement to identify new trends in the environment and develop new ideas for the strategic alliance or cluster?
03. Are change and innovation topics for the development of the strategic alliance or cluster?
04. Is there a (formal or informal) change agent team?
05. Are the management tasks and structures clearly defined?
06. Is leadership practised in the strategic alliance or network?
07. Is there a simple but emotional vision for the network or strategic alliance?
08. Is this vision communicated actively internally and externally, and is it still living?

Key factors

Organising strategic alliances and clusters requires attention from partners and management.

Clusters and strategic alliances are often not a separate business, but they are nevertheless separate social systems and living organisations. The implication is that they can change, grow and even die. Organising strategic alliances and clusters accordingly requires adequate attention from partners and management. In addition, this involves more than the legal and technical organisation which usually gets most attention.

Phases of organisational development

Organisations have their own life cycle. Often, a distinction is made between the following phases:

- In the pioneer phase the founders have their hand on the tiller and feel responsible for everything. The organisation is energetic and chaotic.
- In the differentiation phase the organisation is gradually given more formal structure, more rules and processes are defined, and tasks and roles are described and assigned more precisely.
- During the growth phase the network becomes more and more successful and its successes b come better known, so that new partners join and bring with them more potential for success.
- In the crisis phase networks and clusters threaten to collapse because of their successes (or lack thereof). One possibility is that the organisation, its management and service facilities become overwhelmed, reducing its appeal. Another is that changes in the environment or among partners and stakeholders are not noticed in time or at all. The organisation misses the opportunity to make the necessary changes.
- During the transformation phase the network, strategic alliance or cluster is successfully moved from an unsatisfactory state to a new one. If this is done in a (major) crisis, the transformation can also mean a new start.

Naturally, these phases are not a historical sequence, but merely an aid to thinking. Many clusters, for example, advance directly from the pioneer phase to crisis, without ever having achieved appropriate growth.

Many clusters are also designed "on the drawing board" – i.e. "artificially" created by consultants and administrative offices – so that they never pass through a pioneer phase for lack of energetic pioneers.

On the way to becoming a learning organisation

Change management covers all the systems and processes in an organisation which are there so that the necessary change process can take place and static organisations can become learning organisations.

Change management is not a technology but a complex system starting at the personal level, extending into the partner organisations and reflected in the structures and systems of the cluster or strategic alliance.

5. TOPICS

5.3. CHANGE | **5.3.3. STRATEGIC LEARNING AND MANAGEMENT**

Key questions

Four decisive questions

01. Do those responsible for the cluster take regularly a shared "time-out" for strategic learning?

02. Are all cluster partners involved in reflection on and further development of the cluster?

03. Are evaluations and surveys of various stakeholders the basis for strategic learning?

04. Are external consultants involved to support and moderate strategy sessions?

Key factors

Every strategic alliance and cluster is in danger of "ageing", losing dynamism and the ability to respond to new conditions. Even successful networks are not immune against losing their innovative strength, as success sometimes leads to inertia. Preventing this and finding the strategies for future success are the tasks of an active strategic learning culture and management.

Strategy means deriving the future from the future and not from the past

The basis for strategic learning and management is the will and the ability to derive the future from the future and not from the past.

However, this requires different forms of collecting information and planning than operating management:

- One approach taken by many strategic alliances and clusters for getting a picture of their own capabilities, is a systematic comparison between their capabilities and performance with those of their competitors. Best practices are identified within and outside the industry looking at businesses and strategic alliances which are exemplary by virtue of their superiority over competitors on one dimension of their performance.
- One methodological variant for identifying gaps in capability compared with the competition has established itself under the title "benchmarking". Benchmarking is both a stimulus and a tool for seeking new sources of knowledge and capabilities. Comparing between your own processes and those of other businesses and strategic alliances (ideally with the most successful for each process) can remedy evolving internal operational blindness. Benchmarking requires a prior internal evaluation of the business's processes. Besides identifying knowledge, this also initiates organisational learning.
- The result is that the focused identification of knowledge creates transparency. This in turn allows for better orientation for partners in the strategic alliance or cluster, and enhances access to the external knowledge environment. The strategic alliance or cluster accordingly makes more efficient use of internal and external resources, improving its own response capability.
- Turning the focus of knowledge identification to the future requires assessing future developments which are important for the company and raising management awareness.

- This may take the form of early warning systems which identify and tackle economic, legislative or social signals at an early stage. The goal is to make possible forecasts and take suitable measures. Tools include monitoring (known issues are observed specifically and systematically) and scanning (the business environment is searched broadly for new issues without any specific focus).
- Lifestyle analyses study systematic changes in value systems and opinion changes of important reference groups. Lifestyles are often closely linked to trends.
- Trend research identifies long term movements in the society and decides which are important and which not. Trends can be shaped – provided they are recognised early enough.
- To get information on future developments, the most frequently used tool is the scenario method. The goal is to come up with images of the future and describe possible pathways for reaching these including the conditions on the way. In terms of knowledge management, these scenarios show which factors might play an important role in the development of the businesses and what knowledge is needed to make the desired futures come about. Scenarios do not forecast the future, but instead represent a possible, probable and desirable future which makes possible solidly based decisions.
- Future laboratories are used as an alternative to the time and cost intensive scenario method. Trend assumptions are formulated in project teams which make possible a glimpse into the future in order to derive strategies for the next few years.

It is important to separate strategic learning and management from operational meetings. Otherwise there is the risk that the problem-related and solution-oriented pressure of operating action will block or hamper open and creative strategic thinking.

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