

Stage-Gate® at Voith Paper Fabrics – Greater customer benefit through faster product development



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As a world leader in paper machine fabrics, Voith Paper Fabrics works in a global product development environment. These activities are centrally managed by the R&D/Technology Center in Pfullingen, Germany, where our basic research and process development is also located.

During restructuring of the Voith Paper Fabrics R&D/Technology organization, a very effective customer-oriented development process was introduced. This enables flexible compliance with customer requirements and the systematic development of Voith Paper products in teamwork.

The result is a solid know-how basis, that, together with basic research activities, makes a valuable contribution to the development of future-oriented manufacturing technologies.

Thanks to clearly defined responsibilities in the development fields of forming, pressing, drying, materials and process technology, product development transparency and focusing have greatly improved. By integrating sales and marketing activities at an early stage in development projects and joining forces with all the Voith Paper divisions, we can now concentrate much more intensively on customer needs.

By highlighting specific customer problems, cooperation with our applications specialists for all the various paper grades enables us to develop innovative solutions more rapidly.

Due to the complexity of manufacturing technology, our forming wires, press felts, dryer fabrics and transfer/smoothing belts are developed in close teamwork with the respective Voith production plants for each sales region worldwide, centrally coordinated in Pfullingen.

Introduction of the Stage-Gate® project management system

After extensive studies, the Stage-Gate® project management system was globally introduced in the Voith Paper Fabrics R&D/Technology organization for the following reasons:

- It enables the central management of development projects, involving several locations worldwide
- Systematic resource management
- Portfolio management can be more efficiently structured for meeting customer needs and developing new technologies
- Product development is integrated in the overall business process
- Joint projects within Voith Paper can be controlled and managed more efficiently.

In the next phase, the overall system was established and employee training and system introduction was started.

The Stage-Gate® process

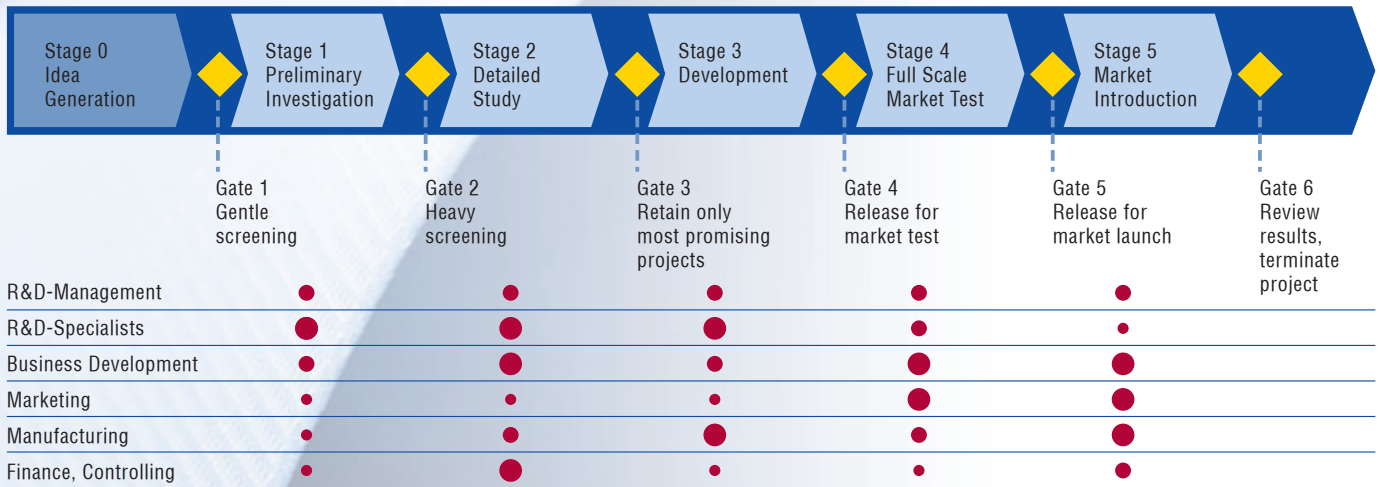
The Stage-Gate® process is a phased product development model, each stage of which is handled as a 'mini-project' embedded in the overall project structure. This not only enables optimal resource allocation among parallel projects, but also the efficient monitoring of intermediate goals and definition of break-off criteria.

In contrast to the conventional milestone plan, there is much more emphasis thereby on setting gates as hard, clearly defined limits. Only if the respective gatekeeper gives the go-ahead, can the project be continued. In case of a 'kill' decision, the project is immediately terminated. If it is decided to redirect the project, the next gate cannot be passed until this has been done.

Structure of the Stage-Gate® process

As indicated by its name, the Stage-Gate® process is made up of stages (project phases) and gates.

Schematic flow chart of the Stage-Gate® process, with typical integration of various responsibilities during the course of a development project.



Stages

The first stage is **idea generation**, a kind of brainstorming phase where ideas are collected and structured.

Then comes the **preliminary investigation** stage, where rough estimates are made of technical feasibility, the project costs and timeframe involved, and the potential market volume.

This is followed by the **detailed study** stage, involving a thorough investigation of all factors including the market situation, technical and technological solutions, financial analysis, etc.

The subsequent **development** stage covers product and process development as well as prototyping and the definition of production goals.

After that comes the **full-scale market test** stage, which is critical for project success. With close customer involvement, the respective product or technology thereby undergoes product pre-launch trials to test for market acceptance and manufacturing dependability. Based on test results and customer feedback, the decision is then taken whether to go into full production or not.

Finally, the **market introduction** stage involves a systematic and widely based

product launch, followed by revalidation after assessing the experience gained thereby.

Gates

These five or six project phases are separated by gates, where decisions are made by the respective gatekeepers according to defined criteria. Only three decisions are possible:

- Go:** continue the development project.
- Kill:** terminate the project immediately while safeguarding all findings and know-how gained so far.
- Redirect:** do not continue the project until after realignment.

Interdisciplinary project structure

One of the main advantages of this staged development process is that the right specialists are engaged at the right time under the supervision of each respective project manager. The philosophy of a sole project manager, often applied to small development projects, is replaced here by task distribution among the respective experts according to responsibility for each project phase.

In line with the latest findings, development projects are no longer reserved for

the “backroom boys”, but handled as actual business processes.

Customer benefits

Including customer requirements at an early stage in the selection process is an important step toward interdisciplinary, customer-oriented product development. Well structured decision-making during the course of the defined project sequence enables reproducible, resource-optimized development.

Factually based decisions also help the project team members to concentrate on goal attainment rather than emotional considerations.

By embedding Voith Paper Fabrics in Voith Paper, the volume of joint projects and activities has risen steeply. The common controlling system for development projects strengthens our systematic approach, and enables us to cooperate more closely and efficiently thanks to an analogous project structure on all sides.

Stage-Gate is a registered trademark of STAGE-GATE Inc., Ancaster (Ontario, Canada).