

CASE STUDY**Accelerating
New Product
Development**

A growing Danish manufacturer of electric linear actuators adopts lean product development and creates a highly-disciplined new product development process that hits milestones with 30-40% faster lead times.

Client

Privately-held manufacturer of electric linear actuators employing 1,800 people in 35 countries with 400,000 sq. ft. of engineering and production space.

Challenge

Product development cycles became inconsistent and slow after recent decades of dramatic growth. Company leaders wanted to redesign product development processes to accelerate lead times and hit launch targets.

Solution

Analyzed the current development process and designed a three-tier process based on product complexity. This included: periodic portfolio review, restructured project planning, performance management, and weekly escalation meetings to quickly resolve issues.

Results

After more than a year of planning and initial implementation, the company is well on its way to achieving 30-40 percent faster product development lead times.

One of the seemingly inescapable fates of a growing business is that the larger it gets the more bureaucratic it becomes. Over time, a fast and agile company gradually becomes slower and less responsive to customer needs and market changes.

For more than a year, TBM has been working with the product development teams at LINAK to thwart that tendency. Management's goal is to create a highly disciplined product development process that always hits milestones with 30–40 percent faster lead times.

LINAK is well on its way to achieving that target within the next year. This case study explores that project, as well as the company's overall evolution and growth.

Managing Steady Growth

In 1980, LINAK's owner and CEO, Bent Jensen, developed the first electric linear actuator. Linear actuators convert the rotational motion of a low voltage DC motor into push-pull linear movements. Combined with electronic controls, they can lift, adjust, tilt, push and pull heavy and hard-to-reach objects.

Today the LINAK Group headquarters in Guderup, Denmark, spans over 400,000 sq. ft. of engineering and production space. The company is divided into four market-oriented business units. LINAK's linear actuators feature lifting capacities from 45 to 2,700 lbs. The primary applications are adjustable beds, adjustable desks, heavy-duty machinery and outdoor equipment.



Faster Speed to Market

LINAK's Objective: Launch new products 30-40% faster

To achieve the objective, LINAK kaizen teams:

- **Analyzed the development** workload by function
- **Established detailed flow** and time estimates
- **Created a three-tier development process** based on product complexity
- **Implemented a periodic review** of new product ideas to actively manage the product portfolio and align resources
- **Created a restructured project planning** and performance management process to monitor tasks and due dates
- **Developed and tracked KPIs** (planned vs actual hours and completed dates) to drive future improvement
- **Established weekly escalation meetings** to address failures and road-blocks-software

In 2000, following a decade of rapid growth, the company embarked on its first major change initiative. "Our customers loved what we made because it fit their needs, but our quality wasn't always superb," recalls John Frost, V.P. & General Manager. Frost was one of the company's first employees, which today total nearly 1,800 people. "We could move fast but we didn't always have the right procedures in place."

One of the biggest challenges of that initial quality improvement project was top management, he remembers. Managers had a tough time getting used to the different pace, new metrics and more deliberate quality control processes. But they persevered and today, when he visits customers, Frost happily reports that he rarely hears about quality issues.

In 2005, the company began implementing lean manufacturing practices in its production areas. That initiative eliminated excess handling, movement and inventory, significantly increasing throughput and productivity. The results of their ongoing lean efforts are readily apparent today in the orderly material flow in the company's production areas, highly visible performance reporting boards and exceptional on-time delivery performance.

Both the quality initiative and introduction of lean production methods changed the LINAK culture, according to Frost. The company became more process-oriented, more systematic, more careful and, in some cases, slower than their competition.

"Compared to other companies at our revenue level, I think we are still pretty agile, but some bureaucracy has sneaked in. It takes longer to develop a product today than it did years ago because there are many more activities, like FMEA [failure modes and effects analysis]," he says.

If At First You Don't Succeed, Try Again

Not long after LINAK implemented lean manufacturing practices in its production areas, it launched lean initiatives in its R&D departments. The process changes didn't take root. Frost says the company wasn't far enough along to apply lean to R&D. Today, however, they are ready.

"A more structured way of doing R&D will give us speed and efficiency."

— John Frost,
V.P. & General Manager

TBM began working with LINAK to design and implement a new product development process in the first quarter of 2014. Management liked the kaizen workshop approach which forced cross-functional agreement and cooperation.

“A more structured way of doing R&D will give us speed and efficiency,” says Frost. “We don’t want to go full speed in R&D and then, all of a sudden, find that operations or the quality department can’t cope.”

Following an initial assessment of past projects, the first kaizen event team mapped out each phase of the current development process on a long sheet of brown paper. It was enlightening. Everyone had a rough idea of the process which had become messier over the years, but no one really had a detailed view of everything that happened from idea generation to product launch.



“It was a very intense week,” recalls Ashwin Badve, Senior Management Consultant and Director of LeanSigma for Strategic Growth. “But the team was able to come together, identify major opportunities and make some decisions that would have typically taken nine to 10 months.”

During subsequent kaizen workshops, improvement teams designed the new development process from the initial idea and project team formation through product launch and business review. One team analyzed the development workload by function, including sales, mechanical engineering, electrical engineering, purchasing, production engineering, quality and marketing. They then established detailed flow and time estimates and incorporated them into a new three-tier development process based on product complexity: low (6 months), medium (12 months) and high complexity (18 months).

“During TBM’s initial assessment we noted that they had more of a ‘tunnel’ than a ‘funnel’ for prioritizing projects.”

The new approach also includes a periodic review of new product ideas to align resources and more actively manage the company’s product portfolio. “During TBM’s initial assessment we noted that they had more of a ‘tunnel’ than a ‘funnel’ for prioritizing projects,” says Badve.

A restructured project planning and performance management process monitors tasks and due dates. They are also tracking key performance indicators (planned to actual hours, and completion dates, for each task) to drive future improvement.

Going forward, product development managers will address any failures or roadblocks in weekly escalation meetings. “In R&D you’re typically trying to do something that has never been done before,” Frost concludes. “A lot of strange things can happen, and it’s rare where you have a project that runs as you believed or anticipated.”

Leading Change at LINAK



John Frost, V.P. & General Manager, shares some of his thoughts on leading successful change initiatives.

John Frost has been with LINAK since the company had 60 employees. Today, it has almost 1,800 employees worldwide. Within the company's matrix management structure, he is responsible for operations in the Desk-line division (which makes height adjustable desk components) plus R&D activity for several other divisions.

Based on your experience, what are some of the key aspects of managing successful change initiatives?

It's important to remove obstacles along the way so that everyone can see that you're moving forward. That's why organizations sometimes fail, and that's why we failed with the first R&D improvement project five years ago. Management has to make the tough decisions and not hesitate or wait. You need to demonstrate that you'll get problems solved quickly.

How do you identify the right people to lead change projects?

Consultants typically say, "You need to get more resources." From where? Everyone is busy and you don't have the cavalry around the corner. You have to try to pick the best people. People who are willing to put in some extra hours and who have an open mind. But in the end they have their jobs and the world is not standing still while we are doing our projects. It always takes extra energy.

What are some of the change leadership traits of successful managers?

You have to be open and honest all of the time, and you have to be realistic. Don't shout things out like a dictator from a balcony when you have no clue whether it can be done or not. Being ambitious is not a problem, but if you're too ambitious and you don't fix the problems, then you will fail. If you fix the problems and the goal is within reach, then good management can change a lot.

Ashwin Badve, Senior Management Consultant and Director of LeanSigma for Strategic Growth. Ashwin is an accomplished lean quality systems leader and ASQ-certified Six Sigma black belt. He has extensive experience with policy deployment; new product development, launch and commercialization; value stream mapping; and Six Sigma variation reduction. He can be reached at abadve@tbmcg.com.

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