

Developing Your Products in Half the Time

By **Roman Pichler** and **Preston Smith**

Pressure to develop new products at a greater speed is an alluring goal for executives. It is important to look beyond the often mentioned techniques of improved cross-functional participation, awareness of the customer or a 'phases-and-gates' product development process, and to examine the limitations and alternatives of faster development, so that you can smoothly implement the techniques that fit your individual business requirements.



'Time-to-market' is valuable. The cost of delay (in pre-tax profit) may be less than €1,000 a day for minor projects, but can exceed €1,000,000 per day for a major project. Even before you commence a 'time-to-market' programme, you should calculate the cost of delay for each of your projects— as each project will differ from the next. With this programme you can invest wisely in opportunities that will speed up development. Alternatively, it can alert you to the need to conserve resources when appropriate.

Speed?

The first potential mistake executives make when initiating a 'cycle-time' programme is to be vague about the desired improvements that need to be achieved or more significantly how it relates to the overall business goals. This 'fuzzy' thinking (lack of clarity of desired aims) weakens achievement of the efficiencies required of the product development process.

There are inevitably different versions of 'speed' available for different types of implementation, and inevitably different tools and approaches. Below are some frequently used terms that denote different 'speeds' to market:

Speed traps

As you consider accelerating your product development, beware of pitfalls that have snared others.

First, do not equate speed with skipping steps of development. Although some steps may not

DEFINITION

Cross-functional participation

although product development is often equated with R&D or engineering, vital aspects come from other departments, especially marketing and manufacturing but also finance, procurement, or legal. Unless these other players participate seamlessly, development is likely to stumble.

contribute commensurate value and can be planned to be skipped, skipping steps simply because they are burdensome will lead to problems downstream. Somehow, many executives unwittingly send this message.

Second, many purveyors of product development tools suggest that a major benefit of their tool is speed. Such tools include a Web-enabled product development process, computer-aided design software, and videoconferencing.

TERMS REFERRING TO 'SPEED'

- **Straight-out Speed** – pure speed. This is the most obvious option and can be important in high-tech markets where products become outmoded quickly
- **Reducing Schedule Variation** – when products depend on hitting a certain deadline, such as a holiday or an annual trade show, predictability can be more important than pure speed
- **Increased Productivity** – a good example of 'fuzzy' thinking, where executives couch 'a work-harder message' in terms of a more palatable one, viz. 'time to market'
- **Avoiding Rework and Mistakes** – although this can contribute uncertainty to the schedule, managing wasted resources is often the real objective
- **Schedule Discipline** – many organisations do not want to accelerate development but instead would be content sticking to the schedule they have set
- **Reaching Short-Term Financial Goals** – a focus on achieving next quarter's numbers, which does nothing to improve the business for succeeding quarters
- **Agility** – this gives you the power to change direction quickly and smoothly, relatively late in a project, which can be of immense value in today's dynamic world

None of these examples is likely to fit your situation exactly, so use them only to start understanding your particular circumstances.

DEFINITION

Phases-and-gates product development process

a common type of corporate development process in which phases of effort, such as concept development or validation testing, are followed by a 'gate' where management reviews work completed-to-date and approves entry to the next phase. Such gates provide management with a great deal of control, but they can also slow the process considerably.

These tools, at best, are simply 'enablers' of effective product development practices.

Unfortunately, you will have to start with the difficult work of re-designing your development process, reorganising teams to work effectively, providing

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strong customer feedback, and other items before the tools will contribute much.

Third, each product development project potentially offers two deliverables, the new product and improvements to your product development process. In the rush to get the product to market and then to move on to the next project, few companies realise the second deliverable. As a result, improving their time-to-market is limited to a stop-gap measure

on one project. In order to reduce cycle time sustainably, you must identify and apply the lessons learned from each previous project.

Fourth, because mistakes waste time, some companies aim their accelerated development efforts at eliminating mistakes by tightening their product development process progressively. Although this might eventually eliminate many mistakes, it also adds more baggage which slows things down. In the end, you must depend on the good judgement of your people, so this is where you should be placing your emphasis through programmes such as mentoring.

Lastly, when developing a technical product, most team members are likely to be engineers or scientists. Do not conclude that you should turn product development over to the engineers. Most of the delays do not occur in engineering but instead in the interfaces with other departments.

Communication as a core capability

If you dissect what happens in product development, you will find that, at its roots, it is simply thousands of decisions, each of which requires interactive communication to resolve. Consequently, if you concentrate on speeding up your communication and decision loops, you will inevitably speed up development. Today however, the trend is often in the other direction as companies acquire and move various departments to separate sites, thus inhibiting fast, clear communication.

Consider the plight of an American design engineer as he was visiting a plant in Denmark where his latest design was being assembled as part of a global product development project. One assembly worker was using particularly strong language and was clearly unhappy. When the design engineer asked his host for a translation into English, the host replied: "If I ever meet the engineer who designed this I will wring his neck!" The engineer decided that this was not the best time to start resolving design decisions. This example illustrates how important early, frequent communication is among all functions involved in your product development.

A flexible development process

Siemens is a good example of a company that has implemented shorter and shorter product development cycles, particularly in the area of software-intensive systems. To accelerate product development, various Siemens business groups have introduced an agile/iterative development process, where products are no longer developed in one go, but rather in small cycles called iterations.



DEFINITION

Cycle-time programme

a corporate initiative to reduce product development time consistently on some or all future projects.

Iterations are typically timeboxed, that is, they have a fixed start and end date, which must not be moved. Instead of moving dates, functionality is postponed to next iterations if necessary. This technique focuses product development on hitting deadlines. Additionally, a small batch approach reduces the likelihood of delays caused by capacity shortages, such as in system testing. Rather than testing the system only at the end of the development lifecycle, testing activities are started early on in the

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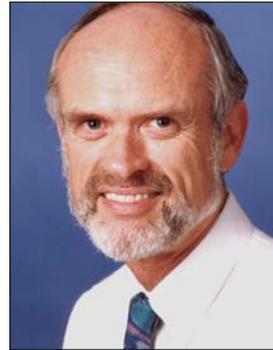
development process and are performed continuously ensuring high product quality.

At the end of each iteration, a stable and testable product release is available that demonstrates the project's progress. Each increment builds on the previous one and moves the product closer to its completion. An increment may be shown to customers, ensuring that the product under development does indeed satisfy the customer's needs. If the product does not fulfil the customer's requirements, the agile/iterative approach allows for changes to be accommodated easily, leading to greater flexibility and increased customer satisfaction.

To speed up development further, Siemens business groups have simplified their process lifecycle by removing some milestones or process gates. The development teams can now proceed quickly without any potential delays caused by milestone approval meetings. Project progress is no longer only measured by inspecting documents but instead by testing an intermediate product release (increment).

Conclusion

Product development can be accelerated dramatically, but it does require you to look at development differently. Relate speed to your business objectives and communicate this relationship widely. Know what kind of speed you desire, and calculate the financial loss connected with each week of slippage. Knit R&D tightly to other departments, such as marketing and sourcing, and tighten any decision-making loops. Rather than thinking sequentially, execute using pre-planned iterations and stop when the product is adequate to ship.



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