

References on NPI Process improvement

Bessant, J. and Francis, D. (1997) Implementing the new product development process, *Technovation*, 17(4):189-197

Abstract: A case study is presented of an electronics firm designing and implementing a new new product development system. In particular, it emphasizes the organizational development processes required to implement and develop ownership of the system. Some comments are presented on transferring this approach to other organizations, and on research issues arising from the experience.

Cooper, R.G. (1999) From Experience: The Invisible Success Factors in Product Innovation, *Journal of Product Innovation Management*, 16(2):115-133

Abstract: The microscope on the state of product innovation is lowered, and the fact that product innovation does not happen as well as it should and that the critical success factors are noticeably absent from the typical new product project are discussed. The reasons why so many companies and senior managements have failed to heed the messages and continue to repeat the same mistakes is outlined. Last, the solutions that are proposed are not another process, and not another market research methodology, but approaches designed to tackle the difficult question of management's failure to listen and businesses' failure to embrace the critical success factors.

Karlsson, C. and Åhlström, P. (1996) The Difficult Path to Lean Product Development, *Journal of Product Innovation Management*, 13, 283-295

Abstract: Lean product development holds the promise of dramatically improving a company's competitive position. Its implementation offers the potential for faster product development with fewer engineering hours, improved manufacturability of products, higher quality products, fewer production start-up problems, and faster time to market. Of course, all of this improves the likelihood of market success. Lean product development comprises numerous interrelated techniques, including supplier involvement, cross-functional teams, concurrent engineering, integration of various functional aspects of each project, the use of a heavyweight team structure, and strategic management of each development project. However, a company does not achieve lean product development simply by implementing some of these techniques. A successful move toward lean product development requires approaching these interrelated techniques as elements of a coherent whole.

Lester, D. (1998) Critical Success Factors for New Product Development, *Research Technology Management*, January-February, 36-43

Abstract: The success of a new product development effort hinges on 16 critical factors in five areas: 1) Senior management commitment, which is a key prerequisite for success; 2) Organizational structure and processes that support the venture; 3) Attractive new product concepts being available for development; 4) Venture teams with appropriate staffing and resources, able to communicate effectively with management and markets; 5) Project management able to focus on reducing uncertainties as early as possible. Attention to these factors during the early stages of new product development allows managers to save significant time and money while reducing delays and risks.

New product development involves: Formulating new product concepts; assessing the feasibility of the concept from technical, manufacturing and business standpoints; demonstrating the product's performance and benefits and the viability of the business opportunity; scaling up to commercial status. Unfortunately, it is easy to invest far too much time and money early in the process, before determining that the product is even viable. Sometimes this judgement is never reached until the project is terminated. Why does this happen? In our work with new business development at Hoechst, my colleagues and I have found a range of potential problems that can derail well-intentioned new product development efforts. By working through these problems, we discovered the 16 critical success factors presented in this article. They center on five areas: Senior management commitment, organizational structure and processes, developing attractive new product concepts, forming a venture team, and project management.

Major, J., Pellegrin, J. and Pittler, A. (1998) Meeting the Software Challenge: Strategy for Competitive Success, *Research Technology Management*, January-February, 1998, 48-56

Abstract: The software industry has come a long way from an era dominated by the first, relatively immature, teams to one in which acceptance of software processes is widespread. Unfortunately, that is not enough. After you have the processes, you need the tools and procedures that will drive quality up and cycle time down. To that end, Motorola has focused on technology assessments, technology road maps and the proliferation of the demonstrably best

alternatives in tools and procedures. An article focuses on the strategic use of metrics at all levels in the company to understand the impact of the tools and technologies on its process to date, and to guide future improvement strategies.

O'Connor, P. (1994) From experience - Implementing a stage-gate process: A multi-company perspective, *Journal of Product Innovation Management*, 11(3):183-200

Abstract: Many companies recognize the benefits of developing new products through a Stage-Gate work-flow process. Yet implementing such a process is a significant challenge, made complex by the dynamics of time, changing organizational structures, and the transition of key personnel. A report is given of the experiences of several large organizations currently implementing their versions of a Stage-Gate process. The analysis points out critical impediments to implementation and suggests the recourse to each. Guidelines are presented for implementing a Stage-Gate process; these guidelines offer a practical approach to realizing the desired benefits of the process sooner.

NPI Books - general

Cooper, R.G. (1993) *Winning at New Products*, 2nd ed. Reading, MA.: Addison-Wesley

McGrath, Michael E. (ed) (1996) *Setting the PACE in Product Development : a guide to product and cycle-time excellence*. Butterworth-Heinemann

Ulrich, Karl T. and Eppinger, Steven D. (2000) *Product design and development*. Second edition, London: McGraw-Hill

Wheelwright, S. C. and Clark, K.B. (1992) *Revolutionising Product Development*. Free Press, New York

Product Design and Development

Andreasen, M. and Hein, L. (1987) *Integrated Product Development*. Bedford: IFS (Publications)

Baxter, M. (1995) *Product Design: Practical methods for the systematic development of new products*. Chapman and Hall, London

Blaich, R. (1993) *Product design and corporate strategy: managing the connection for competitive advantage*, New York; London: McGraw-Hill

Bruce, Margaret and Biemans, Wim G. (Eds) (1995) *Product Development: meeting the challenge of the design-marketing interface*, Wiley, Chichester

Bruce, Margaret and Jevnaker, Birgit H. (Eds) (1998) *Management of design alliances: sustaining competitive advantage*, Chichester: Wiley

Bruce, M., Wooton, W. and Cooper, R. (2000) *Creative Product Design: A practical guide to requirements capture management*

Cooper, R. and Press, M. (1995) *The Design Agenda : A Guide to Successful Design Management*. Wiley, Chichester

Deschamps, J-P. and Nayak, P.R. (1995) *Product Juggernauts : How Companies Mobilize to Generate a Stream of Market Winners*, Harvard Business School Press.

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Hollins, G. and Hollins, B. (1991) *Total Design: Managing the Design Process in the Service Sector*, Pitman, London

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- Pilditch, J. (1987) Winning Ways: How 'Winning' Companies create the products we all want to buy, Harper and Row, London
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- Roy, R. and Wield, D. (Eds) (1986) Product design and technological innovation: a reader, Milton Keynes: Open University Press
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- Walsh, V., Roy, R., Bruce, M. and Potter, S. (1992) Winning by Design : Technology, Product Design and International Competitiveness, Blackwell, Oxford.
- Wheelwright, S. C. and Clark, K.B. (1992) Revolutionising Product Development. Free Press, New York