Engineering and Product Development Management: The Holistic Approach

Stephen Armstrong
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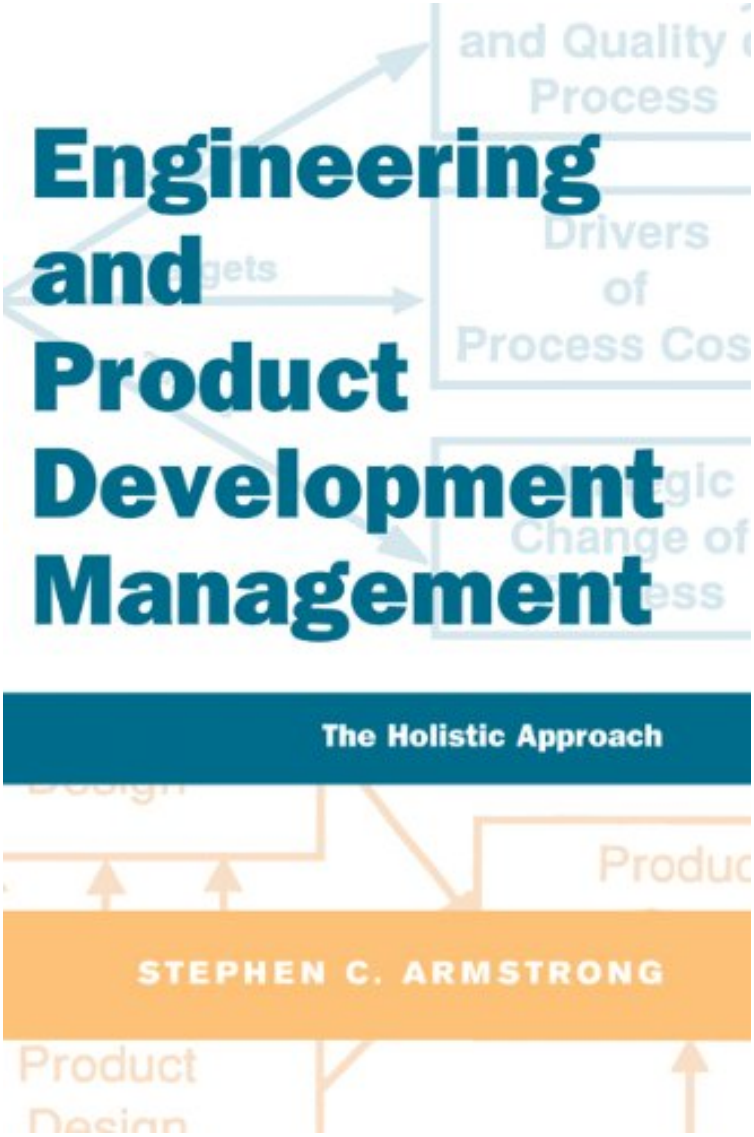

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Stephen Armstrong : Engineering and Product Development Management: The Holistic Approach before purchasing it in order to gage whether or not it would be worth my time, and all praised Engineering and Product Development Management: The Holistic Approach:

0 of 0 people found the following review helpful. Five StarsBy SAISON DAMIENexcellent book and approaches for excellent engineering and NPD management !6 of 6 people found the following review helpful. The Holistic Approach is far reachingBy david AndersonI read this book over the past few months and felt compelled to write a review. The

book is very important to me. I have been managing and directing engineering and product development for years and I am a strong and experienced engineer. I have managed some fairly complex and challenging projects for electronic device companies. I realize now that some of these projects and products, while successful, required a lot of energy and effort to carry through. I also realize that I have tended to see these projects as largely "engineer-centered" projects without the needed holism. Further, I now realize that it takes a very special individual to really lead a project. In my case, it was the president of my company who intervened and really made the difference in the process. I understood subconsciously what he was doing. However, it was not until I read the book that I realized how really complex the process was and how the "engineering-centered" view was a potential weak spot in the process.As part of the rejuvenation of our products, I launched the "new look" project as engineering manager. Early on, it was clear that the project had a lot of skepticism, factions, diverse opinions, and general resistance to change. As Stephen Armstrong suggests, change management is a very profound process to establish and maintain. He also implies that engineers may only focus on the linear and technical process and perhaps not grasp or control the other influences that can affect the success of true product development. In the case of Summit, the president joined the project team and participated actively in the meetings and the process because I think that he knew that this had to be a "holistic" process. This was critical because of the importance of the project to the company. Some team members at the meetings suggested that he was usurping my role as project leader. I was engineering manager and had assumed the role of "team leader" because traditionally product development was centered in engineering/RD. What I experienced was a lot of resistance and resentment from other departments such as manufacturing, QA, and service. I realized that if the project were to succeed that I would need a strong mandate from the top and sustainable support from the corner office, along with much better teamwork. I did not resent the president's presence. Instead, I sensed that something good and interesting was happening. In retrospect, I now see that he (the president) wanted an integrated (holistic) solution and that there were forces and influences that only he could influence or control. The lesson to me was that thinking of the project only in a linear technical fashion, while important, was not the complete answer to getting things done in the needed time frame. The final project was not perfect in all respects. While we were able to keep development cost down, this did take more time because of the need to locate and coordinate contract resources and unexpected problems with certain key vendors. Also, we spent resources on a feature that was later decided to eliminate. Regardless, we did demonstrate to the marketplace that we had up-to-date technology and the commitment to support our products going forward.A couple of other items* Our president (COO) sent the whole company off to project management training. This was an important step because it provided a common agenda and dialog for the team and it showed the commitment of top management to success of the project and the product.* The COO's time and availability became a problem because of business pressures. He did not abandon the project and appointed a second-in-command, a marketing director, to continue the day-to-day operations. The marketing director had sufficient communications skills, organizational clout, and the ability to stimulate teamwork that kept the process going. In fact, it was one of the best functioning teams because a workable process replaced the interdepartmental conflicts.The COO was and is a smart, demanding, and a really good leader. What he did was to address the product development process in the holistic manner that Stephen describes. At times, I felt that my role as engineering manager was being affected by the President's intervention. The president was careful to get my agreement and he made a point of sitting beside me at meetings to lend support. I realize now that I could not have pulled off the project by myself. The engineering process alone had been tried twice before and had failed to produce results. It was an uphill struggle with a lot of technical challenges along with the project challengers. The political, organizational, etc. issues were too large and beyond the scope of my control. I am a good manager in the engineering process but not in the league of the president. So the purpose of the article is to point out the revelation that I had during the project and especially when I read the book.Those who do not apply a holistic approach to product development are most likely old school executives/engineers (we've done it this way for 30 years) who are the blockers in the organization. The author describes in detail the tactics to deal with blockers. The blockers usually ignore the human issues and think a team is just a collection of people in a room.6 of 6 people found the following review helpful. Excellent Book on PD Processes Political ManagementBy J CurryThe vision of engineering management presented by Stephen Armstrong is one that is both broad in its context and deep in its coverage. He offers the engineering project manager with a extensive set of management tools that, when used in total, will assure project success while improving overall project engineering effectiveness. Managers that employ this methodology will soon find this to be their indispensable desktop reference manual as the progress through the phases of product development.The demands on the modern engineering manager are greater than they have ever been and the challenges to program success continue to grow exponentially. The rapid growth of technology has resulted in most of the products being developed by current and future companies - large and small - being inordinately complex systems of integrated technologies. This complexity is exacerbated by the complicated interdependencies among the technologies of the various product components. The availability of highly capable e-design, e-analysis, and e-prototyping tools and the growth in new methods that better integrate design and manufacturing are both wonderful benefits and potential burdens to the engineering teams using them. The move to virtual prototyping changes the planning and staffing profiles from that of the traditional project

engineering organization. Added to these changes are the increasing demands for shorter and shorter engineering span times accompanied with further expectation that engineering costs must be reduced by factors of 30% to 50% for businesses to remain competitive, and in some cases these reductions are expected to be recurring. These factors bring additional uncertainties and risk to an activity that has traditionally been risky.Given this backdrop, Stephen Armstrong urges us to view the engineering management problem from a different perspective than has been offered before. Engineering managers should adopt a total perspective of the problems that they have facing them.While they divide the work along the logical lines of work breakdown, they must at the same time undertake the effort with the right tools and processes to assure success. At the core of these processes are the ones that provide a logical and systematic definition of work flow and that provide the mechanisms to control and manage risk. Since an engineering effort is simply the maturation of information, understanding the flow of information and the management of it is critical to success. We are also cautioned that the answers to good engineering management are more than just technical or administrative. The engineering manager must recognize that his primary resource is people and provide a human side to the management of engineering teams.The managers that read this book will find the formula for the success of their projects. You will find as you read the pages of useful management methods that a pattern starts to unfold and the powerful concept of an integrated technical management will form. Your approach to successful engineering management will never be the same.

Engineering and Product Development Management is a practical guide to the components of engineering management, using a holistic approach. It will help engineers and managers understand what they have to do to improve the product development process by deploying new technology and new methods of working in concurrent teams. The book takes elements from six well known and understood bodies of knowledge and integrates them into a holistic approach: integrated product development, project management, process management, systems engineering, product data management, and organizational change management. These elements are framed within an overall enterprise-wide architecture. The techniques discussed in this book work for both huge multinational organizations and smaller enterprises. The emphasis throughout is on practical tools which will be invaluable for engineers, managers, and consultants responsible for project and product development.

"Stephen Armstrong's book makes a good contribution to the body of knowledge on product development, and deserves a place in the library of any manager working in this area." Mark Crowne, IEE "Stephen Armstrong's book is an invaluable resource that advocates the integration of technical aspects of engineering with leadership and process management. It is an excellent addition to the libraries of planning, design, and operation engineers, consulting engineers, project and program managers, engineering managers, directors and executives." Daria Babaie, Engineering Dimensions"...a practical guide to the components of engineering management..." Business HorizonsAbout the AuthorStephen Armstrong is a partner of AMGI-Bywater, an international strategic management consultancy. He has a proven track record as a performance improvement expert in technologically complex environments - from individual executive leadership performance to broad enterprise wide improvement. He provides services directly to CEOs, executive teams and steering groups leading various types of performance improvement transformation initiatives. Stephen began his career first as an apprentice, then as a graduate engineer in the aerospace industry, specializing in manufacturing engineering research and development in advanced composite materials. He entered the management consulting profession in 1988 joining KPMG (formerly Stevenson Kellogg Ernst and Whinney) and has developed innovative approaches and proprietary methodologies in the areas of strategic change and future state visioning, business design/transformation, new product development (NPD), Lean process management, ERP implementation, organizational development, and enterprise integration. While at KPMG he earned the Certified Management Consultant (CMC) - the international premier qualification in the profession. In 1993, Stephen undertook his first entrepreneurial venture by developing an integrated product development process that was adopted by numerous aerospace and defense companies. He has adapted performance improvement methodologies to a broad range of industry sectors to achieve dramatic improvements by coaching his clients' self-directed innovation teams within integrated enterprise systems architecture. Stephen has also assisted many CEOs and executive teams to develop stakeholder-driven strategic plans and to resolve key issues of governance at senior management levels. His coaching delivery is based on practitioner-based expertise in change management, operations management, engineering and product development management, technology management and project management. Stephen teaches a Masters cours