



TRANSACTIONS FROM
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Blitz QFD® 1997

Using the QFD Blitz for Making Better Proposals by *Dr. Thomas Fehlmann and Dr. Ernest Wallmüller of Unisys (Schweiz) AG.* Writing proposals is a critical step for the success of a project involving external suppliers. It initiates the process of synchronizing the value chains between suppliers and customer. This paper describes the adaptation of Blitz QFD® to proposal drafting and writing, and the demonstrated results of better competitive position, higher success rate, reduced cycle time for preparation and more understandable proposals.

QFD as a Support System to the Identification of Key Ideas for Technological Changes/Innovation by *Antonio Di Zanni of Piaggio Veicoli Europei S.p.A.* This paper describes Piaggio's use of QFD to identifying areas of technological innovation and product concept innovation based on the BLITZ QFD® technique. The presentation will describe the results to date including, the definition of a needs tree of European two-wheeler customers, definition of product function tree, identification of priority market segments, and the identification of innovation areas peculiar to market segments.

Construction 1997

Using Post-Occupancy Evaluation and QFD Methodologies to Improve Quality in Building Construction by *Elizabeth K. A. Londe, Carlos Alberto Nunes Cosenza and Monica Santos Salgado of Universidade Federal do Rio de Janeiro.* Post-Occupancy Evaluation (POE) analyzes the relationship between the built environment and the user behavior. It's primary usage is to evaluate the performance of buildings while QFD provides a systematic approach for the analysis of customer demands. This paper presents how to integrate POE and QFD in a consistent way so when used together they are effective way to listen to the voice of client in building construction.

Consumer Products 1997

Developing an Integrated Model of Designing the Ideal TV for the Consumer through QFD: A Consumer Electronics Case Study by *Taylan Özsipahi and Haluk Ünsal of Beko Elektronik.* Beko Elektronik is the leading consumer electronics manufacturer in Turkey. This paper presents a case study on the application of QFD methodology to the development of a new series of televisions main chassis in order to obtain the optimum picture quality with competitive price characteristics. In addition, the integrated product development process used at Beko Elektronik is discussed.

Defense 1997

Modeling Knowledge Integration, Extending House of Quality to Meta-Fusion by *Kevin Marler of Raytheon E-Systems.* This paper will demonstrate how the House of Quality (HOQ) models within QFD can be extended through Meta-Fusion to evaluate teaming arrangements. Meta-Fusion is the effective integration of knowledge from industry partners, educational institutions, and government agencies. A team from Raytheon E-Systems' Garland facility will demonstrate how Meta-Fusion HOQ was used to propose a teaming arrangement to produce a virtual-reality training system.

Systematic Application of Quality Management Principles in a Military Organization by *Master Sergeant Ronald G. Ferrick and Staff Sergeant John D. Marshall of the U.S. Air Force, 16th Logistics Group.* Introducing quality management principles to military organizations produced some real challenges for this quality integration office. Foremost of these challenges were the acceptance of quality principles such as customer, vision, process, teams, empowerment, and metrics into a military environment. This paper describes the results of this effort and a strategic planning approach to tie all the principles together in a systematic application.

Function Analysis (FA) 1997

Function is the Foundation by *Larry Shillito of Eastman Kodak.* Function analysis (FA), born in value engineering, has proven to be a valuable tool in the world of QFD. Function is the interface between the customer and product. If we understand the interface between product function and Voice of the Customer (VOC), FA can be used to augment the VOC collection process. This paper will illustrate the use of FA for VOC acquisition and product design and technology selection.

General Industry 1997

Task Deployment: Managing the Human Side of QFD by *Glenn Mazur of Japan Business Consultants, Ltd.* This paper will discuss the history of Task Deployment, its structure based on the 5W2H3C formula plus flow charting, and give examples of applications in QFD from determining project teams, defining market segments based on product usage, guiding customer visits, analyzing customer's business problems, creating job descriptions and plant requirements for service operations, and redefining the New Product Development Process itself. This paper is based on the pioneering work of the late Dr. Shigeru Mizuno (co-developer of QFD with Dr. Akao) and the author's own work over the past twelve years.

20 Ways to Make Sure QFD Will Fail in Your Organization by *Mike Wilson of OSW Cornerstone Associates.* This paper will draw on extensive experience in the application of QFD to manufacturing and service organizations to report on a composite of customer interactions. Included will be a discussion of success stories, applications of QFD to new industries, unique problems and solutions, and new or supporting techniques that will lead to the successful application of QFD.

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QFD: The Swedish Experience by *Fredrik Ekdahl and Anders Gustafsson of Linköping University, Sweden*. The results from a survey covering over 30 Swedish companies regarding the type of Swedish companies that are using QFD, how they use it, the difficulties they have encountered and the benefits they have realized. Selected case studies will be presented from companies on the leading edge of QFD usage in Sweden.

Confirming Expert Judgment through Correlation by *William Slabey of IVON Corporation*. This is a paper about a key supporting technique that elevates the relationship matrix from one based solely on expert judgment to more thorough methods. Use of correlation techniques to identify relationships allows expected relationships to be confirmed as well as identifying other unexpected measures that may drive customer perception. For people who are new to QFD, this advanced technique improves the core process of QFD which is the translation of customer requirements into company requirements. Advanced users will appreciate the helpful hints, tips and pitfalls to using R2 correlation methods to confirm relationships.

A Non-Traditional Use of QFD: QFD Integrated with Management Systems to Determine Organizational Structure and Performance Evaluation by *Richard A. Jacobs of Columbia Gas of Ohio*. QFD can be defined as a matrix analysis which can be used to prioritize expectations and resolve conflicts. Management can be viewed as a system comprised of six primary components: leadership, power, culture, accountability, interactivity, and responsibility. By merging these two premises a new technique for determining organizational structure and performance evaluation can be developed. This paper describes this non-traditional use of QFD.

Expand, Collapse, and Subset - The Keys to Small Matrices by *Dilworth Lyman of ViewPoint & Understanding Enhancement*. Large matrices have been the death of more QFD efforts than any other single cause. This presentation describes how to focus efforts where they are most needed with an increasing level of detail. The methods to accomplish this are Expand, Collapse and Subset. This paper will show how and when to use each of these methods, explaining the mathematics and rigor necessary to preserve the value and accuracy of the matrices.

Systems Thinking Simulations as an Aid for Design QFD by *Joe Miller of Quality Process Consulting*. Systems Thinking based simulations of proposed product and service concepts provide a powerful extension of QFD. This paper presents specific approaches and examples for defining models from QFD identified functions and quality characteristics, and demonstrates software aided execution of those models. These simulations have proven useful to expand team and management understanding of product concepts and have aided more realistic design target setting.

Accelerating QFD by *Gershon Blumstein of Electronic Data Systems*. The effect of Trade Off Studies on vehicle development has been successfully applied to developing automotive subsystems. The results have been dramatic in supporting the Concurrent Engineering process. The objective of this paper is to explain how to use the information generated from the Trade Off Study in order to choose the best concept alternative that meets the requirements (needed functions) of several customers. This is used to accelerate the QFD process.

Improving Quality Function Deployment Through Customer Feedback: A Case-Based Reasoning Approach by *D.A. Adams, Prof. C. Irgens and Dr. E. MacArthur of University of Paisley*. It is proposed that it may be possible to learn by correlating historic QFDs with customer feedback data. Identification of similarities between QFDs and historic QFDs should enable the reuse of solutions - or partial solutions - which worked, the omission of unsuccessful solutions, or the improvement of solutions. This paper develops this concept and discusses a prototype system which adopts an artificial intelligence technique known as Case-Based Reasoning to identify similarities between new and historic QFDs.

Healthcare 1997

Prioritizing Customer Requirements in a Rapidly Changing Marketplace by *Bill Naccarato of Dade International, Inc.* Changes in health care financing methods have led to substantial changes in health care delivery, which provide a significant challenge for new product development in the industry. Using a structured process for product definition, Dade is now developing an analyzer that will facilitate workstation consolidation within hospital clinical laboratory. This talk presents an overview of how the change in the health care market affect design of analyzers. Using actual data, the presentation will demonstrate the techniques used to process information and prioritize customer requirements.

A QFD-Based Evaluation of Prevention Services by *Robert F. Hales, ProAction Development, Inc., Pamela Clark and Don Lakes of TriHealth*. With financial incentives changing in the healthcare environment, healthcare organizations, physicians, and employers need to become focused on developing and offering health services that are designed to prevent, or minimize the impact of illness or injury. This paper will describe the process used to develop an overall corporate strategy, structure and service based solely on the benefits TriHealth's customers' desire from a Prevention Services provider.

Hoshin Planning 1997

Hoshin Planning and QFD by *Ian Ferguson of Ian Ferguson Associates, UK*. This paper discusses the organizational and cultural needs required of a company before considering implementing Policy Deployment using a Hoshin Kanri methodology. A step-by-step process is described to make a company mission and values a reality by directional strategies and goals being deployed through targeted policies, into plans with measurable control items.

Manufacturing 1997

A Competitive Advantage by Pamela Dunham formerly with AIDA-Dayton Technologies Corporation. This paper describes how a manufacturer of metal forming presses and auxiliary equipment utilized QFD, Strategic Planning and Policy Deployment to address the basic business questions of: What is important to our customers?, What activities should be our focus in the next 1-5 years?, How do we focus associates on the company strategic objectives? and How do we gain and sustain a competitive advantage in the marketplace?

Reliability 1997

Reliability Function Deployment - RFD: A Systems Approach by Jayant Trewn and Dr. Kai Yang of Wayne State University. The purpose of this paper is to provide a conceptual framework to be used to deploy reliability characteristics into the functional design of a system (component, part, or a product as a combination of components or parts). Integration of reliability requirements into the design of a system, product or process is achieved through an integration of QFD techniques with Fault Tree Analysis.

Software 1997

Deploying Software QFD Within Large Organizations by Thomas Gorham and Mark P. McDonald of Andersen Consulting. This paper is a summary of approximately 30 case studies where QFD has been used for software development. The paper will discuss success stories and areas for improvement spanning utilities, financial services, manufacturing, telecommunications and other industries, as well as around the world including the U. S., Canada, Australia, and Germany.

Project QFD Managing Software Development Projects by Richard E. Zultner of ZULTNER & CO. Blitz QFD, a "maximum value for minimum effort" approach to QFD, can be used by project managers to concentrate on those project tasks that add the most value to customers. Application of such "efficient customer satisfaction" for a software development project is shown.

Strategy 1997

Strategic QFD for Product Platform and New Technology Planning by Karla Kuzawinski and Dave Zawadzki of Xerox Engineering Systems. As corporations strive to leverage investments in technologies, core competencies, and resources, greater emphasis needs to be put on linking these investments to strategic direction, and getting greater returns by leveraging these investments across families of products. This paper will present how QFD can be used to align both near and long term advanced technology research efforts and corporate strategic direction.

Applying QFD Principles to Strategic Transformation by Robert A. Hunt of Macquarie University, Australia. Based on a major four year study of 127 applications of QFD principles to innovation of physical products, services, software, process and strategy in forty-nine companies in the South-west Pacific Rim, this paper outlines some of the major findings of the study. Among others it gives insight into the importance or otherwise strategic connection and organizational culture for success in innovation and transformation.

A Strategy Formulation Methodology Based on QFD for Traditional Manufacturing Companies by Antony Lowe and Prof. Keith Ridgway of the University of Sheffield, UK. In order to encourage a market focus, innovation and the adoption of modern manufacturing techniques within local companies, a strategy formulation/review methodology using adapted QFD has been developed at the Manufacturing Research Group at Sheffield University. This paper outlines the basis on which this methodology was built including current thinking in strategy research, innovation techniques and QFD. A step-by-step process for its implementation is described, and a case study where the methodology was applied within a manufacturer of coal mining equipment is given.

Telecommunication 1997

Advanced QFD Techniques for Creating a Competitive Edge in a Deregulated Telephone Market by Martin Lossie of Coopers & Lybrand Management Consultants. This paper presents a success story of the application of QFD in the area of telecommunications service provider. Deregulation enables a cable TV operator in The Netherlands to introduce telephone service to residential and business customers. The ability to compete with the incumbent telephone company required an insight to customer satisfaction drivers. QFD was successfully used to identify a comprehensive portfolio of company ingredients that form the basis for creating customer satisfaction.

QFD As a GIDE to Product Realization by David Bowen of Lucent Technologies Network Systems and Patrick G. Brown of Lucent Technologies Bell Laboratories. This paper illustrates the successful application of QFD to an internal process alignment between historically warring functions. Network Systems' use of a QFD approach to frame and translate these stakeholders' voices into Guidelines for Installation, Design & Engineering (GIDE) in a cross-organizational setting has enabled Network Systems to foster product designs that are better-aligned with the entire value creation chain, helping ensure lower end-to-end costs and faster product introduction & change cycles.

Training and Education 1997

Training Function Deployment: Applying QFD to Staff Development by John Stampen of Home Savings and Leveraged Learning. Training Function Deployment (TFD) is a specialized application of QFD that helps assure organizations that their employees are able to perform important job functions. This paper describes the TFD process which begins by building a position profile that prioritizes development goals and identifies related knowledge and skills. It then determines the learning options that will have the greatest likelihood of impacting job performance. The profiles that TFD generates can also be used for recruitment and hiring performance feedback, career planning and training curriculum development.

TRIZ 1997

The TRIZ, QFD and Taguchi Connection by *Dr. John Terninko of Responsible Management, Inc.* Taguchi's approach to robust designs has been in North America since 1981. QFD arrived in 1984 and the new comer TRIZ arrived publicly in 1991. They each have their strengths and weaknesses but together they become an unbeatable powerhouse of Customer Driven Robust Innovations. This paper discusses the linkages between these and other powerful quality tools. The synergy formed becomes the ideal design process.

TRIZ and Integrated New Product Development by *Steve Ungvari of SPI, Inc.* In today's fiercely competitive marketplace, companies must find new strategies to fuel sustainable competitive advantage and growth. New product development coupled to innovation provides organizations unique opportunities to shift the competitive balance in their favor. TRIZ is a powerful new tool that will leverage the power of innovation into the new product development process. This paper will provide the rationale for the use of the tool and explain how the specific TRIZ tools are to be used to vastly improve the new product development process.

TRIZ: Acceleration of Conceptual Design in Product Development by *Zinovy Royzen of TRIZ Consulting, Inc.* Understanding and forecasting of the inevitable evolution of a product accelerates its development, eliminates overlooking of the most promising concepts, helps to develop the strategy of innovation, protects the market by umbrella patents and helps to avoid some very expensive mistakes. This paper describes some of TRIZ approaches to accelerate conceptual design in product development.

Application of TRIZ for Design of New Materials by *Semyon D. Savransky of West Coast Quartz Corporation.* TRIZ is used for the innovative resolution of various technical and physical contradictions in the artificial systems. This paper will illustrate the use of TRIZ principles, such as SuField Analysis, for the design of new materials for electronic applications and the novel class of superconductors - chalcogenide glasses and even melts.

Anticipatory Failure Determination (AFD): The Application of TRIZ to Risk Analysis by *Stan Kaplan of Bayesian Systems, Inc.* Today there is burgeoning interest in quantitatively assessing risk. This interest ranges over a huge spectrum from food safety and environment to transportation, power generation, business risk, investment risk, military risk, etc. One new method is Anticipatory Failure Determination (AFD) and is an application of Russian theory, TRIZ, of inventive problem solving. This paper will present an exposition of AFD in comparison to and within the context formed by the conventional approaches.

Voice of Customer 1997

Using VR-Based Conjoint to Capture the Voice of the Customer by *Lisa Wood, Mohan Bala, Dean Hering of Research Triangle Institute and Todd Romig of Volvo GM Heavy Truck.* This paper describes how Research Triangle Institute used an innovative new tool - TradeOff VR™ - to incorporate the voice of the customer into the product planning process at Volvo GM Heavy Truck. Volvo used TradeOff VR™ - which combines conjoint analysis and virtual reality - to gather customer preferences for feature of a new truck early in the product design process without using physical prototypes.