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TUTORIAL ANNOUNCEMENT

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T02 – Requirements driven innovation

We usually think of requirements as constraints on the system about to be designed. After all, that is why they are called requirements. We will, in this tutorial, look at requirements in two ways:

- Requirements viewed as constraints in the traditional manner - We just shake things up a bit and add a few of our own, irrationally contrived constraints. We then apply a dose of metaphorical thinking to create a few highly imaginative - and useful - new product ideas
- Requirements viewed as opportunities - We will demonstrate an elicitation process combining brainstorming approaches with alternate, idea generation and critical thinking, in a manner that opens our minds to previously unrealized product opportunities.

As normal human beings, we have tendencies to go into new projects with well-conceived ideas of what can and cannot be done. We carry with us vivid memories of the past and our experiences in working on similar design problems. These viewpoints and skills are necessary in order for us to succeed in the design of today's complex information systems. Unfortunately, unless we exercise great care, our approaches, experiences, and skill sets can also severely restrict our design thinking. Our own skills obscure the differentiating gee whiz features - those surprising features that give our product the competitive edge. We will illustrate, in a highly interactive manner, a series of requirements elicitation steps that we have found to be especially useful in the breaking of mind-sets and in creating new product concepts. These approaches repeatedly employ synthesis to inductively create unthinkable possibilities, followed by analysis, metaphorical thinking, and refinement leading to imaginative product concepts. These approaches are applied while generating large sets of potential stakeholders, design attributes, and use cases. As an integral part of eliciting the requirements, we, from the beginning, create a collection of wishful (and wistful) features to select from and draw upon for realization into useful innovative product features.

BIOGRAPHIES

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Donald C. Gause is a Research Professor of Bioengineering and a Professor Emeritus of Systems Science in the Thomas J. Watson School of Engineering and Applied Science, State University of New York @ Binghamton. He is also a Principal and cofounder of Savile Row, LLC. He has worked as an engineer and computer programmer and has managed engineering, programming and education groups with General Motors and IBM. He has been active as a consultant and professor for the past 40+ years and served for many of these years as an adjunct member of IBM's Systems Research Institute (SRI). He has been a visiting scholar and has lectured at many universities and institutes around the world, has been an associate editor of the International Journal of Cybernetics and Systems, and has served as a national lecturer for a number of professional societies including the editorial board of the Journal of Requirements Engineering

Mr. Gause's consulting and research interests include the development and analysis of requirements management and systems design processes, the design of user-oriented systems, and the management of innovation within large organizations. He has advised in the elicitation and documentation of business plans and requirements for Internet start-ups and Fortune 500 companies. He has also consulted on the development of strategic business systems, new products and processes for many leading firms. Mr. Gause is the coauthor (with G.M. Weinberg) of Are Your Lights On?: How to Figure Out What the Problem REALLY Is, Dorset House, N.Y., 1990 and Exploring Requirements: Quality BEFORE Design, Dorset House, N.Y., 1989.

Sami Jantunen is a researcher in the Technology Business Research Center (TBRC), of the Lappeenranta University of Technology, Finland. He received the master's degree in technical physics from Helsinki University of Technology (HUT), Finland, in 1998. He completed his doctoral dissertation, Making Sense of Software Product Requirements, in 2012 at the Technology Business Research Center (TBRC) in Lappeenranta University of Technology (LUT), Finland. Prior to joining LUT, he worked in the software industry for 8 years. During that time he has headed software development organizations in Beijing and Kuala Lumpur. His research interests include software product development, globally distributed software development, utilization of social media, and human aspects of software engineering.