Useful Organizational Knowledge via Knowledge Elicitation and Management

Ronald John Lofaro

Embry-Riddle Aeronautical University, USA

INTRODUCTION

Currently, and with almost light speed, new advances in both human-centered and technology- driven efforts have led to new methods in obtaining and using organizational knowledge. For the purposes of this Chapter, Organizational Knowledge will be seen as the different knowledge and skill sets that the employees of a large company or organization have, and how these can be used and shared to make the organization more effective. The emphasis will be on how to elicit those knowledges and how to evaluate their usage. As examples, Organizational Knowledge can be used in analyses of the structure, techiques and functioning of an organization. Organizational Knowledge can also play in identifying the areas where research is needed, what new knowledge is needed for possible re-organization…and be part of any decision-making that impacts the organization. The author's goal is to explicate a new model for eliciting and using Organizational Knowledge. This Chapter will build a model composed of both old techniques and technological advances in human knowledge elicitation, then using and evaluating the human knowledge gained, plus elements of knowledge management and Pareto analysis. This new paradigm uses all of the components above in a blended Delphi. Advantages of using the components listed are that they are all content-area neutral and, in a real sense, generic in application.

BACKGROUND

The Delphi method was developed by the now USAF's Project RAND during the 1950-1960s. and derived its name from a contraction of the term research and development (**R**esearch **AN**d **D**evelopment). The Delpi technique has long been used for eliciting knowledge from subject matter experts (SMEs) and has become a common methodology/methologies for eliciting analyses, expert opinions and evaluations on a variety of topics. Delphi techniques, a subset of CE/KE, have a goal at arriving at something closer to expert consensus. The Delphi method has been widely adapted to work problems and is still in use today. It has changed over the years from SME anonymity to allowing face-to-face groups (estimate-talk-estimate; ETE) of SMEs. Meister (1985) noted "The (Delphi) methodology is by no means fixed…[it] is still evolving and being researched." This is as true now as it was when Meister stated it. In point of fact, with the leaps in communication methods and related computer technology, this is even more true today as Delphi techniques have recently begun to look at and attempt to take full advantage of these advances.

One also finds that an expansion in the the field called cognitive/knowledge engineering (CE/KE) has occured and is still in progress. KE was defined in 1983 by Edward Feigenbaum and Pamela Mc-Corduck as follows: "KE is an engineering discipline that involves integrating knowledge into computer systems in order to solve complex problems normally requiring a high level of human expertise." For a

more complete overview and discussion on KE, differing views and uses, the reader is referred to Studer, Benjamins and Fensel (1998).

There is a new emphasis on a related discipline: knowledge management (KM). The field of KE has recently expanded to encompass KM as a subset. KM has been defined as "...the practice of selectively applying knowledge from previous experiences….with the express purpose of improving the organization's effectiveness." (Jannex, 2014). For works on KM, Amazon's web site has 50 or more, including the ubiquitious *The Complete Idiot's Guide to Knowledge Management* (Rumizen, 2001).

Pareto Analysis has a long history of being used processes to focus on selecting the best course of action for dealing with issues/problems. Pareto analysis is a formal technique useful where many courses of action are possible. In essence, an estimate or criticality rating is done that allows for selection of effective action (s) that deliver a total benefit to an organization or other entity. Pareto analysis is a creative way of looking at causes/"cures" of organizational problems as it helps stimulate thinking and organize thoughts

The newest sub-set/direction of knowledge elicitation and management is knowledge management success, KMS. KMS is "...a multidimensional concept defined by capturing the right knowledge, getting the right knowledge to the right user and using this knowledge to improve organizational and/or individual performance..." (Jennex, 2012 citing himself, Smolinik and Croasdell, 2009). Thus, KMS evaluates the success of the processes and knowledge generated as the organization develops and uses knowledge about itself. KMS today places emphasis on the success of using a KM process in organization-wide endeavors.

Collectively, all of the above could be used in a paradigm for developing organizatioal knowledge for such processes as decision-making, reorganizations and future research needed, all on an organizational level

The author is here attempting to show how a Small Group Delphi Paradigm (SGDP)/Estimate-Talk-Estimate (ETE) amalgam with a modified Real Time Delphi (RTD) could be used on some specific problems, as well as adding in the use of a mini-Pareto as a start point. And, evaluated as KMS. Finally, this Chapter will outline a blueprint/framework for the processes for using this new paradigm, in real time. All being done in the hopes that such efforts might be of some interest to current and future researchers in developing, using and evaluating Organizational Knowledge. This Chapter will begin with the development of the Small Group Delphi Paradigm, SGDP (Lofaro, R.J. 1992) in 1985/6.

The Small Group Delphi Paradigm: Origin

As the SGDP lies at the heart of the model to be explicated, we begin here. However, space requiemants precuUd all but a bare bones treatment. For a much more complete exposition, please email the author; *lofaro@msn.com.*

The SGDP was somewhat controversial yet was actually the first iteration of the now accepted ECE Delphi. It began with a specific problem and task: to develop for the U.S. Army Aviation Command an computerized aviator candidate selection test that also showed which of the current rotorcraft would be the optimum operational aircraft placement for the candidate upon completion of initial training. In short, Army Aviation wanted to initially train pilots **and** immediately afterward put them in transition training for one of then then operational rotorcraft, based solely on a test. Historically,tthere were several articles that voiced strong objections to a Delphi not being anonomous. A major one being that having participants see and interact with each other would at best, dilute results, and at worst, negate them. As an example, Pill (1970) had said that this may dilute the opinions of the real expert. These the objections seemed to the author to be somewhat bizarre. First, the subject matter experts (SMEs) selected ARE the

10 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage: www.igi-global.com/chapter/useful-organizational-knowledge-via-knowledge-elicitation-and-management/263651

Related Content

An Overview of Diversities in the Use of the Profit and Loss Statement
Ionica V. Oncioiu, Traian Ovidiu Calotand Alin Eliodor Tnase (2021). *Encyclopedia of Organizational Knowledge, Administration, and Technology (pp. 124-134).*
www.irma-international.org/chapter/an-overview-of-diversities-in-the-use-of-the-profit-and-loss-statement/263532

University Governance and Academic Leadership Capacity Building: Perspectives of European and Chinese University Staff Members
Chang Zhuand Merve Zayim-Kurtay (2021). *Research Anthology on Preparing School Administrators to Lead Quality Education Programs (pp. 1111-1134).*
www.irma-international.org/chapter/university-governance-and-academic-leadership-capacity-building/260466

The Challenges and Performance of Female-Owned Entrepreneurial Firms and Management Strategies
Raktima Bharadwaj, Rajoshi Dasand Anindita Majumdar (2023). *Change Management During Unprecedented Times (pp. 43-62).*
www.irma-international.org/chapter/the-challenges-and-performance-of-female-owned-entrepreneurial-firms-and-management-strategies/322656

Ambient-Intelligent Decision Support System (Am-IDSS) for Smart Manufacturing
Marzieh Khakifirooz, Mahdi Fathi, Yiannis Ampatzidisand Panos M. Pardalos (2021). *Encyclopedia of Organizational Knowledge, Administration, and Technology (pp. 2338-2351).*
www.irma-international.org/chapter/ambient-intelligent-decision-support-system-am-idss-for-smart-manufacturing/263695

From Followers to Leaders: Building First-Time Leaders Through Transformational Leadership and Lifelong Learning
Leodis Scott, Joanne E. Howard, Diane M. Howardand Angela C. Freeman (2021). *Handbook of Research on Innate Leadership Characteristics and Examinations of Successful First-Time Leaders (pp. 1-13).*
www.irma-international.org/chapter/from-followers-to-leaders/271339