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On inter-organizational trust engineering in networked collaborations : modeling and management of rational trust

Msanjila, S.S.

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Annex C

Empirical evaluation – questionnaire

C.1 VBE networks involved in evaluation

Experimentation of the TrustMan system and its related conceptual results (methodologies, approaches, mechanisms, etc.) was performed by four VBE networks, namely: IECOS (Mexico), Swiss Microtech (Switzerland) ISOIN (Spain), and Cebenetwork (German). The description of these VBE networks is provided below.

Integration Engineering and Construction Systems – IECOS: IECOS S.A de C.V is a Brokerage network created by the Centre of Innovation in Design and Technology of the Tecnológico de Monterrey, Mexico. IECOS is divided into three business units: (1) *IECOS Technology*: This business unit offers the development of new products, processes and manufacturing systems; (2) *IECOS Supply Services*: This business unit offers the integration of associated enterprises capable to deliver manufactured products (mainly metal-mechanic and plastic parts) according to the quality, cost and delivery time expected by the customer; and (3) *IECOS Engineering*: The business unit develops customized solutions in the electronic and mechanical engineering processes. In 2000 IECOS adapted the Virtual Organisation (VO) model in its collaborative businesses and activities. The result of this strategic decision is that brokers in IECOS network select and integrate competencies of different Mexican small and medium enterprises (SMEs) from a pool of companies – VBE – as their main manufacturing partners. This is done in order to be able to capitalize on new business opportunities and introduce new product in specific market sectors [Source: Galeano, et al., 2008].

Swiss Microtech – SMT: Swiss Microtech is a network (founded in 2001) of seven independent SMEs active in the screw manufacturing industry. The main focus of SMT is on producing parts for the automotive, medical, space and telecommunication sectors and it exports 90% of the production amount. Among the seven SMT members, four of them are competitors and the three others bring complementary competences. Each company keeps its full independence to serve its own customers, and alliances (virtual organizations) are created to address new markets or orders that are out of reach for single companies. Swiss Microtech started collaborating with a Chinese partner network located in the Guangdong Province to cover the Chinese market and find suppliers for simple and cost effective parts. [Source: Galeano, et al., 2008].

Ingeniería y Soluciones Informáticas – ISOIN: ISOIN is the core technological partner of the Aeronautic Cluster of Andalusia. It coordinates innovation activities for the adoption of the advanced CNO (collaborative networked organization) paradigm. The Aeronautic Cluster of Andalusia brings together three prime contractors (EADS-CASA, AIRBUS and GAMESA), 93 subcontractors and a number of supporting entities (Universities, Research Centres and Regional Governments) in order to increase process efficiency and collaboration while fostering innovation. Most companies are located in the provinces of Seville and Cadiz in the South of Spain. ISOIN coordinates its activities under stable collaboration agreements, mainly under a subcontracting form, constituting organizations which are operating with a common ICT infrastructure. As the core technological partner of the Cluster, ISOIN acts as a leader to promote research initiatives and best practices for the adoption of technological pillars towards the collaborative enterprise paradigm within the aeronautical value network [Source: Galeano, et al., 2008].

CeBeNetwork group – CBN: CBN carries out worldwide complex development projects for the European air transport industry and other innovation driven branches. CeBeNetwork GmbH Engineering & IT is the core company of the CeBeNetwork Group. The company offers its customers comprehensive services and products in the fields of cabin, flight physics, systems and structures. As a strategic supplier of the Airbus

Group, CeBeNetwork Engineering & IT has the responsibility to organize specialized collaborative activities and the delivery of entire project solutions. CeBeNetwork is the leader of an engineering supplier network of 39 companies, mostly active in the aeronautical industry. It is also a strategic supplier of services to the main customer – the airbus group – in the civil aerospace industry [Source: Galeano, et al., 2008].

C.2 Description of the questionnaire

In the table below, we present the questionnaire applied to collect evaluation results for the TrustMan system from the four VBE networks described earlier in this annex. The evaluation of the TrustMan system focuses on the five processes (P1-P5) as presented in Section 6.6.2. The description of evaluation indicators considered in this questionnaire is presented in Section 6.6.2.

| P1 | Improving the understanding of trust concepts through provision and access of relevant information | | | |
|----|--|-------------|-------|----------------|
| | Type of indicator | | Value | Comment/reason |
| | Quantitative criteria | Resources | | |
| | | Time | | |
| | Qualitative criteria | Innovation | | |
| | | Reliability | | |
| | | Usability | | |
| | | Expectation | | |
| P2 | Presenting and interpreting the trust level of organizations in the VBE | | | |
| | | | Value | Comment/reason |
| | Quantitative criteria | Resources | | |
| | | Time | | |
| | Qualitative criteria | Innovation | | |
| | | Reliability | | |
| | | Usability | | |
| | | Expectation | | |
| P3 | Selection of trust criteria for assessing the trustworthiness of organizations | | | |
| | | | Value | Comment/reason |
| | Quantitative criteria | Resources | | |
| | | Time | | |
| | Qualitative criteria | Innovation | | |
| | | Reliability | | |
| | | Usability | | |
| | | Expectation | | |
| P4 | Assessment and measurement of the trust level of organizations in VBEs | | | |
| | | | Value | Comment/reason |
| | Quantitative criteria | Resources | | |
| | | Time | | |
| | Qualitative criteria | Innovation | | |
| | | Reliability | | |
| | | Usability | | |
| | | Expectation | | |
| P5 | Management of trust related data (Submission, access, ...) | | | |
| | | | Value | Comment/reason |
| | Quantitative criteria | Resources | | |
| | | Time | | |
| | Qualitative criteria | Innovation | | |
| | | Reliability | | |
| | | Usability | | |
| | | Expectation | | |