

**Abstract:**

Collaborative Networks (CN) should be able to meet two separate objectives: (i) managing the increasing technological complexity of their IS/IT achieving that they generate added value to business processes and, (ii) integrate and coordinate their processes with those of its partners in CN in the search for efficiency and competitiveness to ensure survival in the global market. At the moment that collaborative inter-enterprise systems are implemented, companies that make up these CNs are able to develop joint planning. This prevents inefficiencies that the planning carried out in isolation for each of the chain generates, excessive inventory levels, long cycle or frequent disruptions in the plans. In this sense, collaborative planning allows greater efficiency in planning processes between companies, synchronization and coordination of joint activities and improving customer service.

Achieving these objectives in principle independent, it may be possible jointly by using Enterprise Architectures (EA). Which provide concepts, models and tools that enable organizations to meet the challenges posed by the integration of the strategic areas and business processes with IT areas. Although the use of AE is implemented and studied in depth in the individual firm, these concepts can be extended to CN, but research in this area are very limited. It is proposed the concept of Inter-Enterprise Architecture (IEA) that seeks the application of tools and methodologies developed for individual companies, adapting to an environment of collaboration between several companies that make CN, in order to facilitate the integration that the collaborative processes arises in line with IS / IT harmonizing joint processes, reducing risks and redundancies, increasing service and customer responsiveness, reducing technology costs and aligning business process with the IS / IT. In order to limit the scope of the study and address in depth a specific aspect, the focus on this research is the arrival of unexpected events that affect the hierarchical production planning in collaborative environments will.

Production planning systems face unexpected events that require non-structured decisions causing re planning deliveries, changes in the amounts committed or modifications of master production schedule. However, difficulties and costs for making these changes and re schedules often have the effect that these planning cannot come to run. And so, potential benefits are lost because organizations do not know how to properly respond to these unexpected events.

Therefore, the aim pursued with this thesis is to provide tools to CNs to improve decision making in the management of unexpected events that affect the hierarchical production planning in collaborative environments through the use of enterprise engineering and enterprise architectures. The research project proposes an inter-enterprise architecture consists of: framework, modelling language and methodology.