

“Make everything as simple as possible, but not simpler.” Albert Einstein

Subject: Pre-competitive cross-industry interest group on complexity in logistics and transport management

Dear Sir or Madam,

We kindly invite you to attend the first European industry interest group on complexity in logistics and transport management which will be held in Brussels on Tuesday 22th of June 2010 from 10:00 until 13:00 for all stakeholders and from 13:00 until 17:00 for founding fathers.

Transport and logistics systems are strongly connected and complex adaptive systems of many individuals, firms, and authorities acting in parallel, constantly acting and reacting to what the other parties are doing. Coherent behaviour in the system arises from competition and cooperation among the different actors.

There are many areas and situations in transport and logistics where it is possible to understand the links between cause and effect and to produce prescriptive and predictive models as well as good management tools. On the other hand there is a growing awareness that many of our transport systems and logistics are becoming more and more coupled and complex systems and that a new approach is needed to cope with this complexity.

The concepts of complexity science have presented a way of better describing and understanding dynamics and processes of change found in a range of physical and biological phenomena. Understanding the concept of complexity in logistics and what complexity science can offer to logistics and transport research and management tools is relatively new.

Recent developments in this area are overarching concepts such as Distributed Adaptive Logistics (also called Sense and Respond Logistics) and system of systems.

Distributed Adaptive Logistics is a system interwoven with network-centric operations and based upon highly adaptive, self-synchronizing, dynamically reconfigurable demand and support networks that anticipate and stimulate actions to enhance shared situational awareness capabilities and mitigate support shortfalls organized around self-synchronizing networks that sense demand signals early and produce adaptive responses automatically.

The system of systems approach is inspired by swarming and the behaviour in ant colonies. It moves away from the traditional model of a rigid chain of command to meet the challenges of complexity and uncertainty. Swarming requires autonomous or semi-autonomous operating agents, with strong synchronization and communications among them. A System of systems is able to perform functions that cannot be found in any component systems, and these functions are the main System of systems objectives. A characteristic of a system of systems is that it grows and evolves with time and experience.

A few companies started to integrate these concepts in the development of business solutions. A successful example of this approach is a warehouse automation system, developed by Kiva in the US. (www.kivasystems.com/demo/index.html)

The European Commission stated in its sustainable future for transport report that “a better exploitation of the network’s capacity and of the relative strengths of each mode could contribute significantly to reducing congestion, emissions, pollution and accidents. This, however, requires the optimisation and operation of the network as a single entity, whereas currently modal networks are largely separated and even within modes there is a lack of integration between countries.”

ICT components and subsystems need a total system design that avoids the introduction of constraints that may hamper future objectives, developments and integration in a larger system.

Distributed Adaptive Logistics and System of Systems concepts can help to realise these objectives.

Pre-competitive, multi-disciplinary and multi-sector collaboration are needed to develop these concepts and to develop common open standards. The creation of a European platform would be an important step to promote and facilitate this multi-disciplinary and multi-sector collaboration. It would create new business opportunities for logistics and transport management solution providers.

We would be pleased if you could inform us on your interest in this topic and in your potential participating in the first meeting of the Pre-competitive cross-industry interest group on complexity in logistics and transport management by sending an email to erik.van.agtmaal@altimededes.com.

Yours sincerely,



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About Altimededes

Altimededes Consulting (www.altimededes.com) is a Brussels based European management consulting firm advising public authorities and companies on eco-efficient transport and logistics policy making and operational management, collaborative network development and supply chain and systemic risks assessment and management. Our clients are organisations such as the French environment and energy agency ADEME, Ministry of Agriculture Netherlands, IATA, Port of Amsterdam, OECD, Connekt/Innovation platform Sustainable Logistics in the Netherlands and several large corporations in Europe.