Project	4C4More
Theme	Cross Chain Control Centers (4C),
Project manager	Prof.dr. A.G. de Kok, Technische Universiteit Eindhoven
Partner organizations	Bakker Logistiek Groep, Control Pay, Cordys, ING, Itude, Kuehne+Nagel, Nabuurs, SCA, Unilever Benelux, EUR, TU/e, Universiteit Twente, Vrije Universiteit

Motivation

The R&D project 4C4more addresses one of the three main themes of the Innovation Program Logistics and Supply Chains: Cross Chain Control Centers, in short 4C. The key idea behind 4C is to create economies of scale and scope through inter- and intra-supply-chain collaboration. Economies of scale refer to more efficient use of scarce physical resources and materials, whereas economies of scope refer to more effective use of scarce human resources. Creating such economies of scale and scope boosts profitability of companies involved in 4C activities, while more efficient use of scarce resources and materials contributes to a sustainable planet. It is our vision that 4C activities are essential for coping with ever more demanding customers, ever complex product offerings to the market and ever more complex manufacturing and distribution networks.

Research on planning and control of supply chains in The Netherlands is world-wide recognized as leading. In particular the close link between research and industry on this topic is unique. This has lead to succesful implementations of seed research. This strong scientific position and the proven record of practical applicability of scientific concepts developed are the basis for extending this track record to cross chain planning and control. With the establishment of Dinalog there is a unique incubator environment to translate research into new business activities, such as cross chain forecasting services, planning services, finance services, etc.

Objectives & goals of the project

The research should yield more efficient production, transport and warehousing processes, and thereby lower costs, lower usage of scarce resources and lower emissions. The project also leads to more effective use of human and physical resources. Furthermore the new financing structures developed yield a substantial capital cost reduction. In total we expect a short-term revenue improvement of 10% for the companies involved, both shippers and service providers, 25% reduction in emissions in transport, and 100 new jobs created on the supply chain campus, of which 50% did not exist before the project. Our valorization strategy thus is based on attracting more added value towards the campus from companies involved in the project thereby also targeting for 8 new companies (start-ups) resulting from actively stimulating the 40 MSc students from the MSc student pool to start 4C activities.
Through our concept of a student pool of about 40 students the project also contributes to the development of human capital in logistics and supply chain management. We also aim at active involvement of SME's, such as Itude in our research and we expect more involvement of SME's when demonstration projects are started.

Research approach

The research is organised into 4 parallel PhD projects (Business models, Finance, Forecasting, ICT), one postdoc project (Planning) supported by a multitude of MSc thesis projects that both help existing companies to implement 4C activities and develop tools that are the basis for new 4C business activities. The young researchers, postdoc and MSc students are supervised by senior faculty with a strong track record in research and university-industry collaboration. As high quality research requires in-depth investment of time and resources, while the aim is to start new business activities as soon as possible, a process is developed to turn early research results into tools. By implementing these tools in parallel to the scientific research, we are able to gather empirical evidence of the effectiveness of the knowledge developed. This will lead to publications in top journals, besides the ones that directly follow from the initial PhD research.

Expected results

We refer to the objectives and goals mentioned above. Furthermore we expect 20 papers in scientific journals of which about 5 in top journals. The MSc projects provide a basis for the development of education materials that can be used for training and education of professionals and students to acquire 4C skills.