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Biography of the author
Professor Einarsson is the former dean of the Faculty of Economics and Business Administration at the University of Iceland. He obtained his PhD in Germany. He is the author of 6 books on microeconomics, business administration and cultural economics and over 50 journal articles and conference papers and over 400 shorter articles on economics, fisheries and politics in magazines, newspapers, and on websites. Professor Einarsson is a former Member of the Icelandic Parliament and Chairman of the Board of the Central Bank of Iceland and served as a delegate for Iceland at the General Assembly of the United Nations in New York.

Logistics in the Future –Lessons from the Past

Ladies and gentlemen

The title of the conference is “Collaboration in Logistics – Connecting Islands using Information Technology”. In our field of study we are concerned with building bridges across time and space, a task which is not only complicated in itself, but is made even more complicated by the fact that we operate in an environment which is constantly changing. The challenge we face is to solve present problems and anticipate future problems without losing sight of the solutions found to past problems.

Changes in the history

The current environment we are operating in is a turbulent one, which we from time to time call the "new economy", a reference to the rapid economic growth founded on technological progress, notably in information technology, which is at the core of our field. In times of transformation of this kind, there is a special tendency to regard "new" challenges as entirely new and without precedent.

But profound changes have occurred before in the history of Mankind. The last one took place 250 years ago at the beginning of the industrial age in 1750, which started with the utilisation of the steam engine and contributed to the massive urbanisation that characterises our environment today.

If we go further back in the history of Mankind there were great changes 500 years ago in 1500 when European countries conquered the Western World, no small feat of logistics. Going back another 250 years to 1250 brings us to the beginning of the Renaissance, another time of profound change and discovery sometimes described as the creation of a bridge spanning thousands of years back to classical times. Yet another 250 years bring us to the year 1000, the Age of the Vikings and vast migrations which changed the face of Europe.

I am not proposing the thesis that all great changes occur every 250 years, but it is remarkable that all these changes, whatever their timing, involve building bridges across time and space and all of them are heavily dependent on communications and transportation, the essence of logistics. At all these great crossroads Man had to solve entirely "new" problems with entirely "new" solutions, but looking at them from our vantage point of the present we see things in sharper focus and deeper perspective.

History provides us with numerous insights into our field of study, and perhaps we do not pay enough attention to the solutions of yesterday and the similarities between the problems we are now confronting, in private and public undertakings and enterprises. Looked at from this perspective, many of the problems facing the Roman army during the occupation of Asia Minor, for example, bear some resemblance to the challenges facing modern IT enterprises using the Internet in their operations, although there are of course differences in both speed, distances and volume. I refer, for example to "Untersuchungen zur Logistik des römischen Heeres in den Provinzen des griechischen Ostens (27 v Ch – 235 n Ch)", a German dissertation from 1999, not in logistics but in history. We can learn much not only from the past itself, but also from other scientists' studies of the past.

But there are, of course, vast differences as well. Apart from the differences in speed, distances and volume I mentioned earlier, the framework itself of modern science is relatively new. The world has undergone a transformation in the space of a few decades, let alone two millennia. Today, the population of the earth is about 6 billion, as compared to 1.3 billion in the year 1900 and an estimated 300 million at the birth of Christ. In 25 years from now the inhabitants of this earth will be 8 billion. It does not take a sharp mind to see that these facts will completely change the problems we face and the ways in which we face them.

Globalisation

One of the buzzwords of today is globalisation, which is variously regarded as a solution to all Mankind's problems or as the root of all Mankind's future problems. Whatever the case may be, we know that the idea of globalisation is made possible only by the vast advances we have seen in logistical capacity.

The process of globalisation can be conceptualised in the context of three schools of thought. First, that people are living in a global marketplace where the influence of nation-states is diminishing. Second, that nation-states will remain powerful and there will be several regional blocs in the world. The third possibility is that societies and states will undergo a process of profound change in an uncertain world with an unpredictable outcome. It does not matter which concept is chosen: without today's logistics, there would be no globalisation.

I mentioned earlier that we are concerned in our studies and our work with building bridges across time and space, but it is also true that research and conferences like this one form bridges from one idea to another. Building bridges in this way is characteristic of our field of study, and the subtitle of the conference "connecting islands using information technology", with its reference to new technology, is a traditional scientific approach to a problem. We analyse problems, we identify the facts, and then we propose theories that will fit all the facts and provide the framework for a solution.

We have a case in point here in Iceland, where distance from other countries has had a greater impact on life and history than any other single factor. Although modern technology has cut distances and transport times within and between enterprises, the rather special position of Iceland leaps into perspective if we look at the distance from our capital, Reykjavik, to Iceland's principal trading partners. The average distance to five other countries, Britain, France, Denmark, Germany and Italy, is 2,400 km. In comparison, the average distance between these countries, including Iceland, is 1200 km measured from the capitals, Reykjavik, London, Paris, Copenhagen, Berlin and Rome. I point this out here simply to illustrate the special situation of an island, rather than to claim that it is the definitive factor in our environment. Nevertheless, criteria of this kind are familiar to us, because research in our field of study started with measurements of this kind more than 250 years ago.

Quite apart from the fact of the New Economy, we live in a world where activities in transport, as an aspect of logistics, have increased tremendously. Passenger transport has increased by 42% within the EU over the last 13 years. Transport of goods has increased by 55%, even though gross domestic product has increased in that time by "only" 35%. Container port traffic has doubled over the last decade in major ports in the world. In addition to this, our rapidly changing world is also characterised by the proliferation of small and medium-size enterprises. The number of enterprises within the transport-sector in the EU is almost 800,000, but the number of employees per enterprise is 7.5 on average. All of this adds tremendously to the complexities of logistics in the contemporary world.

A broader view of scientific studies

To take another approach, logistics is an aspect of business economics and concerns the management of the flow of materials and information within and between enterprises. Although we agree that logistics is more than just old wine in new bottles, differentiating between concepts is a mark of strength in reasoning. Such differentiations are necessary, e.g. to determine whether logistics and supply chain management are synonyms, or used as such, or whether they are not, and in that case what the difference is between them. A lively discussion about this and other issues within the framework of a scientific discipline shows strength and provides a view of the stage from within rather than above.

Some may regard it as a trivial exercise to spend time discussing the difference between logistics and supply chain management, that is to say whether they are synonyms or whether supply chain management is an expansion of the concept of logistics. I do not think this is trivial at all, because a precise definition of terms is the essence of science and philosophy. It makes no

difference whether the method is experimental, as in science, or theoretical, as in philosophy. In any case, if a boundary is unclear, it must be clarified for any discourse to be rational. This has always been a fact of scientific debate.

Research, which is the foundation of science, has changed. Specialisation has increased and scientists concentrate more and more on investigating details, often losing sight of the grand scheme of things. We know very well from our discipline the method of forming a group, asking questions, obtaining a 30 to 40% response, and drawing firm conclusions from the result. Statisticians are not always very enthusiastic about the confidence with which we draw conclusion from such research. Nevertheless this method of research brings us forward as almost every research does, although not so far as we often believe.

I believe it is very important, precisely in our discipline of science to focus on the whole picture even though the picture keeps expanding. Modern logistics is a way of thinking, a philosophy to explain activities of movement in an economic environment. Systems of philosophy have always been a part of human culture as a framework for conclusions and research. Our discipline is no exception. I believe it is now even more important than before because in the new economy changes are much faster than before.

The importance of taking in the full picture is illustrated also by the fact that many pioneers have been engaged in many professions apart from their academic field, thereby gaining a broader view of their scientific studies. If we are to believe scientific legend, for instance, we should remember that Newton made his most important discovery not in the laboratory but in the garden, after a great deal of research, of course, and Archimedes made one of his greater discoveries in the bath, also, of course after much thought and research. To give an example nearer to us in time, Joseph Schumpeter, regarded as

one of the leading scholars of the new economy, was not only a scholar, but for some time the finance minister of the Austrian government.

Although we point out here the necessity of drawing parallels with what has happened before we must not generalise and we must avoid asking questions that have no relevant answers. Some questions simply cannot be answered. For example, is information technology a more important revolution than the Renaissance? Did Ronald Coase contribute more to new thinking than René Descartes did? But even though no relevant answers can be found to these questions, the very fact that they can be asked shows us that development and progress are not an exclusive feature of the 20th or the 21st centuries.

Logistics as an aspect of business economics follows the traditional path of microeconomics, but it is also decision-oriented as regards the objectives of enterprises. Business economics has in the course of time shifted its focus from operational management to strategic management and then on to integrated management. The discipline of logistics has undergone a similar process and the concepts of the discipline have expanded. Scientists in other disciplines have had the same experience. We are not as alone and unique as we often think.

The essence of logistics is the management of the flow or movement of materials and information. This is nothing new. The Greek philosopher Heracleitos pointed out 2500 years ago that “Everything flows”. He is also the author of the marvellous dictum that ”We can not step twice into the same river. By the second time neither we nor the river are the same.”

Nevertheless, although no two experiences separated by time can be identical, we can learn much from the past. Many from the Nordic countries may be familiar with the historian and poet Snorri Sturluson, who wrote books about the Nordic kings over three quarters of a millennium ago. In one of his best known

works, *Heimskringla*, or "The Circle of World" he said: “Ari [the historian] knew very much of old wisdom both from this country and abroad. He learned from old and wise men but he was himself eager to learn and had a good memory”. Let these old words be the guidance for the conference.

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