

A New Paradigm Applied: The Distribution Sector

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We are facing a new paradigm driven by a discontinuity induced by technology change, i.e. the separation of information from physical goods driven by information technology diffusion.

To recap, the new paradigm has the following factors:

1. enables a massive growth in wealth
2. reduces transaction costs
3. requires trusted custodians of information
4. enables new forms of organisations
5. changes the boundaries between organisations and the market
6. creates the self-interest for people to own information defining their person
7. requires maximum storage of data to realise maximum returns

The paradigm directly changes several fundamentals in the Distribution sector, which is defined here as the flow of tangible products along the supply chain from source to consumption. The Distribution sector can be seen as an intersection of the Transport, Tangible Goods Production and Organic Goods Production with the Consumer.

First, a massive growth in wealth in society can be expected to be matched with a significant increase in the value of goods in use. However, as information intensification is likely to be accompanied by decrease in volume for goods and improved technologies enable the same function to be performed by smaller items, it is uncertain whether the average volume of goods will increase. Increasing energy costs should further drive miniaturisation, in order to reduce energy consumption for each function, while also encouraging production close to the source. The consequence therefore could be a decline in volume of goods moved and a change of types of goods, to minimise the transportation component of the end product. Finally, the increase of wealth could enable more varied Consumer contact with the supply chain in order to access the goods desired.

Second, reduced transaction costs will enable the distribution system to collect all information relating to the change of status of every tangible item moving from source to consumption, whether raw material, finished tangible good or organic good. Consumers can identify the goods they wish to obtain and access these goods through the information infrastructure and a common distribution location, thereby reducing the energy consumption and real costs of visiting multiple local distribution locations to access a variety of products. The reduced transaction costs enable the Consumer to follow their items and the items that have been used to create the item from source, thus enabling transparency of the supply chain.

Third, the information collected on each tangible has economic benefit to all parties so long as the information can be trusted. There is a need for a trusted intermediary between the parties to verify the trustworthiness of all parties and enable the data to be collected for use within the sector.

Fourth, the information infrastructure enables new organisation forms to appear to meet specific needs. These organisations may pull resources together from disparate

locations in order to achieve goals, may be permanent or temporary in nature and may have a number of different ownership, governance and structure models. The information infrastructure can enable any form of organisational form and thus the best suited forms should emerge to provide value to the sector.

Fifth, the information paradigm changes the boundary between the organisation and the market. The automation of large parts of the distribution model enables the Customer to enable the flow of goods, monitor their locations and direct changes as required. In some cases, the Consumer may provide the distribution location, while in others the distribution location may be a convenient point accessible by transportation and used by a number of Consumers. The incorporation of the Customer and Consumer into the service delivery system for the sector blurs the boundary between the organisation and the market. Further, the use of temporary resources shifts the concept of the organisation, from the permanent core bound to include temporary resources.

Sixth, the large amount of information generated by flow of items and the actions of Customers within the service delivery model creates a potential threat to individual privacy, as the information could be used for purposes not aligned with the individual's interests, including direct marketing and political purposes. It is in the individual's interests to maintain control over the information to prevent its misuse. This control can be best achieved through the individual's ownership over information that personally identifies the individual.

Seventh, the more data is collected on tangible good movement and storage, the greater the value to society as the Distribution sector can achieve its social objectives more efficiently and more effectively. The nature of increasing returns encourages all data to be collected to enable the maximum amount of information to be created in support of the Distribution sector.

These changes can all be predicted by applying a new paradigm of an Information economy. The consequence of these changes is a change in the way tangible goods are moved from their source to the point of consumption, though at the cost of industry-wide change to realise these benefits. It can be expected that the vested interests in the Distribution industry will resist change until it becomes no longer viable, as it represents a threat to their power. The ease of the transition depends on the skills and dedication of people in the sector to the consumer of their services.