The potential for artificial intelligence and big data to affect mobile workforce management is an interesting topic that comes up during customer conversations. Those technologies may also impact another area of interest: the supply chain.

We are all part of a supply chain, in most cases situated at one end – that is, as consumers. The links of the supply chain consist of buyers and sellers in different organisations, adding value in order to fulfil a market need. In the supply chain, it is the interface between buyer and seller that is critical, in the same way as programming interfaces, or more obliquely, the shore – the interface between land and sea.

Reducing the impedance of supply chain procurement transactions is key to improving the efficiency of the chain as a whole. Organisations have been active in eliminating internal bottlenecks through the implementation of IT systems, but transactions between companies have been dominated by paper, from vellum in times past to laser-printed purchase orders now. Paper, and the associated manual processes, have a cost. That cost can be significantly reduced by electronic data interchange (EDI), now embodied in the cloud. The cloud, and its underlying internet technologies, enables buyers and sellers to eliminate paper from their transactions in favour of secure, reliable and efficient messaging. And you can go further; it is possible for suppliers to offer an electronic purchasing experience akin to that of using Amazon, easing the path of buyer organisations and increasing customer satisfaction. With that comes other benefits: contract compliance, status visibility, accuracy of invoices and procure to pay with verifiable results such as:

- 1-5% savings on addressable spend
- $5-10 savings per invoice processed electronically
- 100% delivery of purchase orders electronically

The heart of the supply chain, those electronic messages between buyers and sellers, allows patterns of purchasing drivers to be processed by advanced analytics and machine learning. When we tie this into the Internet of Things, agents in the supply chain need no longer be human. For example, orders to refill vending machines can be based on predicted consumption.

A more significant possibility is when the supply chain is combined with asset performance management (APM). An APM system, such as ABB Ability™ Asset Health Center™, can analyse historical data in conjunction with algorithms of equipment behaviour to predict failure. Parts and services can then be ordered by the APM system, through the automated supply chain to ensure (for example) that a turbine is proactively repaired before failure.

Such capabilities can only be provisioned by organisations that understand both the operational and IT aspects of the supply chain. My team and I would be delighted to hear your views and to share more information on the sunlit uplands of an automated supply chain.

abb.com/enterprise-software
info.pgss@abb.com

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