Building a better working world

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Marco Odoardi
Head of Global Warehousing and Distribution, Merck KGaA

Ecosystems in the pharmaceutical sector are going to impact drug delivery; logistical functions such as warehousing and distribution are also undergoing large shifts. How are these ecosystems being created, from your perspective, and what new tools will you use to make them work?

We have a model with primary and secondary distribution. Primary is the main arm of distribution from our manufacturing sites to selling countries, while our secondary model is what covers the last mile distribution. This is a classic model for many in the industry.

At Merck, we envision two potential directions for how ecosystems will impact warehousing and distribution. One is the planning of production and distribution, or what can be referred to as the "upstream part" of the distribution. Through the use of new tools, activities that take place before the physical distribution can be digitally assisted. This is, and remains, a high value-added activity for us, but it is increasingly getting digital support. These systems are not perfect yet, however, and their development is still work in progress.

Most big pharmaceutical players are running to make this change happen, but without making any structural changes to the current distribution business model. A common objective of all the big firms is to use advanced computing, AI and data analytics, to build smart and computer-aided distribution plans. This is something everyone in the industry is thinking about. Some firms, Merck included, are more advanced, although probably none of us are at the level they would like to be! We are still in the early development phase of these systems.

As regards the "downstream part" of distribution, the physical product transportation and warehousing, the trend points toward robotics and automation. But these innovations are hugely capital-intensive and make business-sense only from a long-term perspective. Payback from these automation investments is rarely quicker than 7-10 years. That means that, as a pharma company, you typically invest in these systems if you have logistic partners with which you share a long relationship or if you have a long-term vision in place. You are not going to invest in these types of innovations otherwise, given the heavy investment involved.

How are you measuring the success of these new ecosystems? What are the improvements your business hopes to gain by using them?

We measure the impact of these systems with four KPIs: environment & safety, quality, service and efficiency. These are the four KPIs that matter for us when we evaluate impact of these tools and processes.

First and foremost, we believe in being a green company and further reducing our CO2 emissions. Ecosystems will hopefully help us to cut down on waste and be more environmentally friendly. As regards safety, you can measure the number of accidents, including those of your logistics providers, so we can see if these tools are improving our workplace environment. With respect to quality, there is a need for all pharmaceutical companies to ensure that products arrive at their destination in perfect condition, which includes monitoring them for temperature excursion. This is another area where we can see how effective the systems are, as we can compare their performance with legacy systems. As for service, classic on-time-and-in-full (OTIF) delivery is our standard measurement.

In financial terms, efficiency is cost and cash. With digitization and the use of these ecosystems, we hope the overall costs will go down, but we still need to consider in the equation the investments needed to make it happen.

These four metrics will hopefully all improve over time as these digital ecosystems become more advanced and integrated into workflow.

Many of these new ecosystems use tools and skills that fall outside the expertise of traditional pharmaceutical companies. In order to compensate for this, have you partnered with any organizations in order to create these new ecosystems?

For these digital revolutions, you need digital capabilities, which are not native to our industry. We have seen several pharmaceutical companies look for partners who have this experience, with many looking to Silicon Valley for expertise and partnerships. Merck has also done this, though not yet at full speed and specifically not for warehousing and distribution. Instead, our aim has been to build out our own internal competency so that we can fully develop and own these ecosystems. We created an internal center of excellence two to three years ago, and this internal team has now developed a significant base of knowledge and serves as an internal think tank dedicated to these new digital opportunities and how we can leverage tools to create some of these ecosystems.

What do firms need to do in order to improve their own internal capabilities?

While automation of distribution activities is capital-intensive, to digitize and optimize distribution and logistics, one has to invest in capabilities. It is really an investment in people and in resources. For a medium or small company, assembling a dedicated team of 20 highly skilled people over a 2- to 3-year period will enable you to build up the necessary internal capabilities.

Interview