



The Frontier of Biology and Digital Technology

(Source: an article prepared by Simeon Bennett, Chitra Somayaji and Marthe Fourcade, which was published by Bloomberg Business)

Following completion of a complex US\$30 billion asset swap and reorientation, CEO Joseph Jimenez is leading Novartis AG into a new frontier of biology and digital technology, to prepare for a future in which the use of smartphones and other digital devices to monitor health will be critical.

As the company prepares for the loss of patents on medicines that make up a fifth of its sales, "Our view has to be based on how healthcare is going to change," Jimenez said in an interview at the company's headquarters in Basel, Switzerland. "If you look at what led to the transformation that we just went through, it was a view of what's going to happen in 10 years externally."

Projects and products include pills and inhalers with sensors that report on patients who miss a dose; clinical tests that rely on Microsoft's Kinect, the motion-sensing technology used with Xboxes, to measure walking speed and balance in people with multiple sclerosis; and Google contact lenses that focus automatically and can deduce diabetics' blood-sugar levels from their tears -- a gamble that Jimenez says could transform eyesight. Novartis and U.S. chipmaker Qualcomm Inc. in January agreed to invest up to US\$100 million to find and fund startups that enable devices such as smartphones to monitor a patient's health remotely.

Among Novartis' top 10 drugs, at least four have lost or will lose U.S. patent protection in the next year, endangering US\$10 billion in revenue. Some of the company's newer products, including a therapy for smoker's cough, have suffered setbacks. Novartis ranks sixth among the world's top 10 drugmakers based on sales growth over five years, behind Bayer AG and Johnson & Johnson, according to data compiled by Bloomberg. While the stock has more than doubled during Jimenez's tenure including reinvested dividends, reaching a market value equivalent to US\$278 billion, it's trailed the Bloomberg index that tracks European pharmaceutical shares.

Jimenez has put a clamp on costs to the tune of US\$2.9 billion last year. One area he spared: the company's labs. "I've told analysts: don't look at research as a place for margin improvement," he said. "If we let unmet medical need be the decider of resource allocation, that's when magic happens." Jimenez has boosted research and development spending in the pharma unit by 25 percent in his five years at the helm, an increase second only to Johnson & Johnson's 64 percent among the world's five biggest drugmakers. Besides ensuring Novartis researchers get funds and autonomy, Jimenez says he's working to foster an environment in which they feel safe to take risks -- even if that means admitting defeat. "One of the reasons why spending in the pharmaceutical industry is so high is that many scientists keep their products alive far beyond when they should be," Jimenez said. "If you help them feel like it's okay to stop the project, you're going to save hundreds of millions of dollars."

The push toward digital medicine comes from Jimenez himself. As head of the pharmaceutical division, he oversaw the company's

continued on page 2

In Brief . . .

♦ **The PHOENIX group** recently celebrated its 20th anniversary. From its offices in Mannheim, Germany the PHOENIX group has developed into a leading pharmaceutical trader in Europe and one of the top 30 companies in Germany over the last two decades. It now has more than 28,500 employees and annual operating revenues in excess of €25 billion / US\$26.8 billion. With originally just a wholesale business in Germany, France, the Czech Republic, Austria, and Poland, today the group covers a broad range of healthcare services in 25 European countries, including the pharmacy retail business in 12 countries, under the leadership of CEO *Oliver Windholz*.

♦ **EBOS Group Limited** reported revenues of NZ\$3.1 billion / US\$2.3 billion (+4%, +6.1% in constant currency) for its first-half ended December 31st. Healthcare revenues increased by 3.7% during the period, led by continuing growth in the Group's Pharmacy and Hospital businesses. In addition, EBOS opened a new pharmacy distribution facility in Melbourne, Australia in November, reflecting EBOS' long term commitment to the industry.

♦ Chinese drug wholesaler and manufacturer **Shanghai Pharmaceuticals Holding Co.** reported overall revenue of RMB92.4 billion / US\$14.9 billion (+18.12%) and a 17% increase in net profit (to RMB2.6 billion / US\$419 million) in 2014.

♦ **Celesio**, a Germany-based subsidiary of **McKesson**, generated group revenue of €22.3 billion / US\$23.9 billion in fiscal 2014, up 4.3% from the prior year. Market growth in Germany as well as in Brazil and the good revenue performance in the United Kingdom, in Austria and in Norway more than compensated the loss in revenue of the Irish wholesale business, which was consolidated until May 2013. Revenue in the Pharmacy Solutions division – the wholesale business – increased 3.6% to €18.6 billion / US\$20 billion while revenue in the Consumer Solutions division – the pharmacy business – increased 7.8% to €3.7 billion / US\$4 billion euro during the year.

♦ **Teva Pharmaceutical Industries** has agreed to acquire **Auspex Pharmaceuticals** in a cash deal valued at US\$3.2 billion. In addition to enhancing Teva's revenue and earnings growth profile, the deal will strengthen its central nervous system franchise thanks to Auspex's portfolio of medications for people dealing with movement disorders.

♦ **OptumRx (US)**, **UnitedHealth Group's** freestanding pharmacy care services business, and **Catamaran (US)**, a provider of PBM services and technology solutions, have agreed to merge in a US\$12.8 billion deal. The combined organization will help customers manage outcomes and increasingly complex costs – as this market activity expands from an estimated US\$100 billion in revenues in 2014 to potentially US\$400 billion annually by 2020.

(Sources: ACN Newswire, Celesio, Drug Store News, EBOS Group, Scrip and ShanghaiPharma)

Frontier (cont.) . . .

first foray into the area by signing a deal with Proteus Digital Health Inc. to develop pills with tiny sensors that alert patients when they fail to take a drug as prescribed. "That was the signal that they had lights on about this stuff," said Eric Topol, director of the Scripps Translational Science Institute in La Jolla, California, and the author of a book on the digital future called *The Patient Will See You Now: The Future of Medicine is in Your Hands*. "You're starting to see it across the industry, but Novartis was there early."

Since the Proteus deal, others including J&J and Merck & Co. have made their own investments in digital medicine. For Jimenez, the digital initiative is about bracing for the day when public health spending will be so stretched that drugmakers will get paid only when they can show a patient's condition improved. That means delivering technology to show the treatment works. Novartis is planning about 10 pilot projects, including one in the U.K. with Google designed to experiment with conditional reimbursement for heart failure by using remote patient monitoring systems in conjunction with its LCZ696 drug.

"It is terrific that companies like Novartis are increasingly recognizing that it is critical to not just make drugs but also ensure that they are delivered effectively," said Bob Kocher, a former health policy adviser to U.S. President Barack Obama who helped shape the Affordable Care Act. An outcomes-based reimbursement system could save US\$1 trillion in U.S. health-care costs over a decade, according to a McKinsey & Co. report.

"We would go in with a package of services including the pharmaceutical, the technology that will help that patient comply, a warning system that showed if that patient was not complying," Jimenez said. "We will have to partner with companies that have like interests in the tech space." That points toward more upcoming transactions. Novartis is looking for bolt-on acquisitions worth between US\$2 billion and US\$5 billion as it keeps a lookout for promising new drugs and tools to ensure they're used properly, according to Jimenez. The company is also "in the process of assessing a whole range of potential collaboration options," Vas Narasimhan, Novartis' head of development, said in an interview. "Stay tuned, there'll be more coming."

Evolutions in the Pharmaceutical Industry in 2015

(Source: Edited excerpts from an article published by SupplyChainBrain and Keller International Publishing)

"The pharmaceutical industry is finally sharpening its focus on profitability and efficiency. 2014 saw continued mergers and acquisitions, but more importantly, the acceleration of business focus on core sectors. Now that the impacts of the Affordable Care Act [in the U.S.] are better understood, the ability to streamline operations into sectors is driving spinoffs, sell-offs and renewed operational pressures. Two key drivers this year involving supply chains will be inventory reduction and control and lean cost reduction," according to Brian Hudock, of Tompkins International.

Enormous pressure will be put on supply chain leaders as a result of the reorganization of the pharmaceutical industry into specific health treatments and sectors, the shedding of lower-margin and higher-volume units, and pressure to maintain margins in their new "specialty focus." Not only will full regulatory compliance, track and trace, product integrity, and security be mandatory and expected, the implementation of operational best

practices to cull historical risk buffers will drive success. Included in these best practices will be: (a) Inventory Management: Not just the reduction of on-hand materials, WIP and finished goods, but also the adoption of better forecasting and planning tools, and the expansion of suppliers. This means finding secondary suppliers for most active pharmaceutical ingredients components and other raw materials for manufacturing support, as well as a reduction in finished goods safety stock.

(b) *Manufacturing Controls*: Both internal and co-manufacturers/co-packagers and partners to not only improve quality and controls, but more importantly to improve process consistency to reduce batch failure rates. Strategic use of WIP multi-process steps to minimize stocking levels.

(c) *Lean Continuous Improvement*: Expansion of process control and evaluation that has been focused on quality now will shift to eliminating layers of overlapping steps built into the process to minimize risk. The new focus will be to eliminate non-value-added steps and replace them with process controls in all segments of the process from purchasing through distribution.

(d) *Transportation*: Security and controls have driven carrier selection and load size limitations that have been hidden by high margins. Freight optimization for "Less than a Truck Load" (LTL) to "Full Truck Load" (TL) is ripe for improvements; however, the impact of "Dimensional" DIM weight pricing on parcel will be significant for all direct delivery players who ship scripts, medical/surgical supplies, and other consumables. Packaging changes and minimum order sizes must be evaluated quickly.

(e) *Logistics and 3PL Partners*: Core competencies aside, the luxury of using 3PLs to manage many business functions is a cost center for most organizations. Evaluating those that provide value and understand cost pressures will determine who is truly a partner. If pharmaceutical and healthcare organizations are not in shared value partnerships, internal capabilities may need to be created or expanded to achieve operational goals. Many industry supply chains will be turned inside out in 2015 as they work to become value centers vs. cost centers as the pharmaceutical landscape is redefined. In fact, many leading pharmaceutical supply chain leaders have been working on new strategies in 2013-2014. The process should start with establishing a baseline, measuring performance, conducting analytics, assessing risk impacts, and being flexible to adapt to a changing world demand.

The article's outlook for 2015 stated that "rebuilding supply chains to fit new, more focused companies and product groupings must be based upon those specific product needs. But the ability to leverage best inventory management practices along with cost and process optimization that challenges traditional business approaches is what will drive supply chain leaders. Reducing inventory levels and obsolescence will generate huge savings, but require cutting-edge planning tools and multi-level sourcing options. Minimizing material warehousing, distribution and transportation costs must start with eliminating waste in process and practices and outdated thinking."

Attention IFPW Members!

Please watch your email for an IFPW Foundation Participation Survey. Your input on this survey is vital to IFPW Foundation's success. Thank you.