

# PUTTING BIOTECHNOLOGY INTO BIOPHARMACEUTICALS

Novozymes Biopharma is well positioned to enable companies to develop superior biopharmaceutical drugs, which represent a third of the drugs currently in the global pharmaceutical development pipeline.

The pharmaceutical industry has been growing at a rate of more than 8% a year since 2003. In future, there are signs of continued growth driven by aging populations, demand for ever-improving healthcare, and the expanding markets in emerging countries.

As people live longer in developed countries, the percentage of the population consisting of elderly people is increasing. For example, more than one in five of the population in Japan, Italy, France, and Germany will be 65 years or older by 2020 (see Fig. 1). An aging population has a significantly greater need of healthcare and so represents a big potential market for pharmaceuticals.

Meanwhile, in emerging countries, sections of the population are demanding the kind of healthcare standards found in the richer countries. India, for example, has a growing middle class with high spending power. Diet is changing too – sometimes for the worse. As Indians move away from their traditional foods, the prevalence of type 2

diabetes is soaring, caused by poor diet and lack of exercise. About two thirds of all cases worldwide are now found in the Asia Pacific region with China alone having 40 million sufferers.

Type 2 diabetes is just one of the metabolic diseases that is increasing around the world. Obesity is also rising, and according to one estimate, two out of three Americans are overweight or obese and 12% of US healthcare costs is related to obesity.

### Role of biopharmaceuticals

Here are some of the treatment areas targeted for future growth by pharmaceutical companies:

- Obesity/diabetes/metabolic diseases
- Alzheimer’s disease & memory
- Antiaging
- Anti-infectives (because of rising antibiotic resistance)
- Wellness (preventive/predictive cure)

Many new treatments will be based on biopharmaceuticals, not conventional synthetic drugs developed by chemical routes. Biopharmaceuticals have the advantage that they can be specifically targeted towards a particular disease or area of the body. Biopharmaceuticals constitute 11% of the current drugs on the market and 32% of all drugs under development. The drug development process, however, is long and expensive: The average time for development is 12 years, and the average cost is USD 1.2 billion.

Not surprisingly, the biopharmaceutical industry is seeking to reduce costs and the time to market. Novozymes Biopharma is uniquely positioned to address the needs of this industry through its innovative products and technologies. These improve the safety and stability of a drug product while streamlining drug development.

One solution for the future is the development of single reliable host expression and manufacturing platforms to produce a number of molecule entities across a biotherapeutics portfolio including proteins, peptides, antibodies, domain antibodies, etc. Such systems can help to lower production costs in commercial-scale manufacturing.

### Formed in 2007

Novozymes has huge knowledge and expertise developed over the years in the industrial biotech field. The company is ranked as the seventh largest biotech company in the world in terms of sales and is best known as the market leader in industrial enzymes. Novozymes Biopharma was formed in 2007 to become a dedicated force within Novozymes for serving the pharmaceutical industry. Novozymes’ core capabilities in recombinant protein production and large-scale biotech processes are equally applicable to the production of biopharmaceuticals as to the production of enzymes.

Novozymes supports pharmaceutical companies with innovative recombinant products and technologies. Novozymes Biopharma also has a large manufacturing capacity with cGMP (cur-

## HOW NOVOZYMES’ PRODUCTS AND TECHNOLOGIES FIT IN WITH THE CUSTOMER’S PROCESS





It's your site  
– make it yours

At the beginning of May, Novozymes launched a completely renovated version of the online enzyme ordering website – the Customer Center. Entirely new functionalities along with better information retrieval and ordering capabilities are among the improvements customers welcome.

## THE NEW CUSTOMER CENTER IS ONLINE

Ordering Novozymes' enzyme products has become much easier. The new Customer Center lets you search for your product by name, which is much quicker than scanning a long list of items. You can also see previously ordered products and place them in your shopping cart with one click or, if you always order the same products, you can place them all in your cart at once – again with one click. It does not get much easier to order online.

Besides a streamlined ordering process, new functionalities have been added that meet customers' wishes:

- Find product documentation quickly
- Make changes to "Open" orders
- Print invoices

### Using customers' suggestions

Quite a few customers were recruited to test the website and give constructive feedback. And many of the suggestions received were incorporated in the design.

"We wanted to make the Customer Center a website that truly meets its users' needs, so we used as many of our customers' requests and suggestions as possible," says Thomas Lund, CRM Manager at Novozymes. "We asked a number of our long-term customers, who've used the Customer Center over the years, to evaluate the

new website early in the design process. We made quite a few changes to our existing plans, based on the responses we received."

### A great web shop experience

Early comments from users seem to show that they are satisfied with the changes made. A few customer comments tell a lot:

- "It's easy to find the information I need"
- "I like that I can sort products alphabetically. It helps me find my products quicker"
- "I like how the website looks. It's original and represents Novozymes well"

"All in all it seems that users are finding that the new Customer Center gives them a great web shop experience. That's really what we'd hoped for," says Thomas Lund. ■

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