

# KNOWLEDGE MANAGEMENT, THE COMPETITIVE ADVANTAGE FOR PHARMACEUTICAL COMPANIES

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## ABSTRACT

*The latest achievements in knowledge-based economy are supporting the existence of important features: the primacy of knowledge in all spheres of economic activity ; intellectual property has a considerable weight in national heritage, to base economic activities is done primarily on intangible resources (knowledge represented by competent people) and only then on tangible resources, economic activities focusing on knowledge accumulation and production of goods - knowledge, the production demasification, the majority share of the permanent growing service sector, the knowledge basis for competitive advantage predominantly owned and used.*

*The main role of business in such an economy is that to obtain, protect, integrate and exploit the specialized knowledge, which gives it a competitive power market.*

*In this case management is not just about a simple knowledge processing but task is to integrate them into the organization. Information technology, human capital, capabilities and competencies of the organization begin to play a increasingly important role within firms.*

**KEYWORDS:** *knowledge management, knowledge, knowledge organization, intellectual capital, pharmaceutical company*

Knowledge management represents an intensive effort to stimulate the sharing and use of knowledge, but also to keep the knowledge secured within the organization.

Knowledge management is a continuous, organization wide-effort that:

- Promotes the creation, transfer and use of knowledge in order to achieve the goals and objectives of the organization;
- Recognizes that organizational success relies on the employees of the company-managers, engineers, technicians, scientists, sales representatives, who have deep and profound understanding of the information, work processes, competitive environment;
- Protects and controls knowledge from the spread outside the organization;
- Changes the way that employees create, share and use their knowledge, so that the organization builds upon the knowledge, transforms individual-held implicit knowledge to organizational-shared explicit knowledge.

All these phenomena are based on knowledge revolution. Knowledge are thus crucial element in achieving high productivity and competitiveness for firms, branches of the economy, national economy, but also for the world economy.

Knowledge management is an ongoing approach and does not end as long as the organization exists and treats knowledge's as a primary factor of functionality and performance in the organization.

Future work of the pharmaceutical companies will be centered on the human factor, more specifically the knowledge factor. In this context, management is required to intervene in the functioning of enterprises, the adoption and implementation of decisions designed to provide the necessary premises to adapt the organization to new environmental conditions and to obtain the competitive advantage.

This is possible by focusing on approach and use of the knowledge in their multiversity and multidimensions, focusing on the strategic importance for the organization.

The pharmaceutical industry relies on innovation and transfer of knowledge, so the take-up of knowledge management has been quicker than in many other sectors.

Indeed, knowledge management as a key corporate discipline, beyond the use of knowledge management technologies, strategies and tools, will become the principal source of differentiation and competitive advantage in the pharmaceutical industry.

The pharmaceutical sector is really an intellectual capital industry, so knowledge management can offer solutions to pharmaceutical companies that allow users to share, analyze, store and interpret information in work processes. They must also provide ways to collect and manage diverse information, and use it effectively to support decision-making, like molecular structures, result tables, clinical trials, links to key internal and external resources, summary reports.

Pharmaceutical companies need to manage a sheer volume of information, and to obtain automated analytic systems to deal with such large portfolios of data in the course of developing new drugs.

Life science companies, like pharmaceuticals ones use knowledge as a strategic advantage and take the following approaches:

- Project an informational system that helps scientists know what have been discovered and by whom;
- Capture and retain inside the company the expertise and intellectual property of the scientists;
- Extract information from existing data sources and promote sharing and coordination.

### **Knowledge Management- the competitive advantage for pharmaceutical companies**

The pharmaceutical industry is unique in the sense that what it essentially do is collect and manage knowledge, by taking useful compound, performing lots of studies on it and generating information about it.

Pharmaceutical companies are implementing knowledge management to enhance strategic performance across the enterprise, to build more comprehensive knowledgebases and to help with long-term development of new products.

Knowledge management is tied directly to critical business processes and can deliver remarkable benefits because companies depend on their ability to discover, develop and market innovative products faster and more effectively than the competition.

Knowledge management support companies to be more productive by co-ordinate the whole drug cycle and monitor the market feed-back faster and more efficient with the elimination of duplicated information inside the organization.

The pharmaceutical environment is facing pressure from shortening new product development times, from increasing research costs, and from governmental reforms aimed at constraining healthcare costs. So, knowledge management is assisting the industry in improving R&D operations, processes, accelerating time-to-market and, ultimately, in cutting overall costs.

### **Research and Development in pharmaceutical companies**

Knowledge management is critical to reduce product cycle time and to improve research and development, in pharmaceutical companies that are knowledge intensive.

To achieve these goals, pharmaceutical companies adopted the strategy to work in multidisciplinary project teams, so R&D professionals must share their findings and conclusions with a geographically dispersed team.

The globalization of R&D supposes collaboration, sharing and use of knowledge across time zones, nations and language barriers.

The pharmaceutical industry is one of the fewer industries that lead synthesis, animal testing, validation, formulation, human testing by involving the world, a variety of nations in these research activities.

Outsourcing elements of the research and development through contract research organizations, biotechnology firms, university laboratories, can be considered a bold strategic decision for pharmaceutical companies that have to move in a rapidly changing environment. The relationship with the research organizations supposes efficient transfer of knowledge, solutions and findings from the external sources to the internal team, and inside the company knowledge need to be transferred and shared among the teams.

The repeated explorations that lead to failure must not be forgotten, this is why knowledge management is critical and necessary because when the failure is shared the advantage is that it is no longer repeated.

The R&D of new intellectual property represents the competitive advantage for pharmaceutical companies and includes the development of new molecules, drugs, regulatory compliance programs, marketing programs. The launch of molecule and new drugs need to be quicker finalized because the development cycle of a new formulation is reduced. That is why R&D processes need to have a better understanding and knowledge management represents the solution to make this happen.

## **The KM approach of the multinational pharmaceutical companies**

The pharmaceutical industry has the biggest potential to be affected by the intellectual capital loss, and it is very important that organizational knowledge does not leave with an employee, so the control aspects of knowledge management can act as an additional safeguard. To avoid this, companies must extract that knowledge that is the most important aspect of an employee's contribution, analyze and share it.

### **Astra Zeneca**

Astra Zeneca is using processes and technologies to transfer and retain the knowledge from the R&D and manufacturing professionals and has created a network system for sharing ideas, knowledge and experience among the employees. The company also developed a scientific network for R&D information and data, an international biology information system, called IBIS.

IBIS platform includes deposits of data of key areas of primary research: oncology, respiratory diseases, central nervous system disorders and cardiovascular and chemistry knowledge that scientists and researchers access via online portals.

### **Knowledge Management at Novartis**

Novartis, the pharmaceutical giant formed in 1996 with the merger of Sandoz and Ciba-Geigy introduced the **Informatics and Knowledge Management** (IKN) organization in the Novartis Institute for Biomedical Research that is responsible for the standard informatics issues found in biological research.

Novartis has defined their own approaches in knowledge management:

- Information Integration Unit: integration and analysis tools, including e-learning and collaborative tools
- Knowledge Production Unit: statistics, decision support, competitive intelligence, patents
- Knowledge Base Unit: documentation, storage, "knowledge curation"
- Knowledge Center Unit: library functions, knowledge policies for copyright and records retention
- Knowledge Engineering Unit: KnowledgeSpace portal, common terminology

The Knowledge Marketplace is described as the virtual forum for the people at Novartis, which include internal and external expert databases and a forum.

### **Sanofi Aventis**

The first step for Sanofi-Aventis in its knowledge management approach was to abandon the phrase R&D and to replace it with DI&A. Sanofi Aventis Pharmaceuticals has a clear mandate for knowledge management in their research & development organization, which they call Drug Innovation and Approval as

they describe it on their website: DI&A Knowledge Networks Management is a unique function that includes Knowledge Management, Alliances and External Networks Management and Risk Management. These teams play an important role in facilitating two key principles of the DI&A philosophy: knowledge sharing and maintaining a "network-centric" organization.

Instead, the company has organized around a drug innovation "value net", a web in which all the information generated in any of Aventis's disease programs will be immediately available throughout the organization. The new organizational approach is also more efficient, reducing product cycle time from 10–15 years to 6–9 years, with 2–3 new chemical entities being produced each year.

### **Conclusions**

The pharmaceutical industry had a spectacular evolution over the past decade in optimizing the clinical development and the decrease in the time required to gain regulatory approval for a new drug.

Knowledge management has enormous potential, especially in research and development, where technical development is very rapid, and involves combining knowledge from a number of different areas in the creation of new products.

KM has specific benefits because it can help to deliver both global and local knowledge where it is required and, in particular, help to insulate against corporate intellectual property erosion due to staff movements.

Knowledge management is the key for the success of pharmaceutical companies because it provides sharing of information, best practices, and experiences, at different levels.

But in an industry so reliant on intellectual property and innovation, knowledge management clearly has a powerful role to play, perhaps more so than in industries that have already embraced KM and fully recognised the benefits the discipline has to offer.

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