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Role of Information Professionals in Pharmaceutical Research

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ABSTRACT

The Indian pharmaceutical industry is largely focused on generic drug products and thus an exhaustive search on the molecule and formulation to be developed is a pre-requisite to any research project. Most searches for any new project is conducted by the scientists themselves and the role of information professionals is largely untapped in the domestic pharmaceutical industry. Information professionals are skilled in identifying the right resource and searching in a precise manner. However, few pharmaceutical companies have established libraries with information professionals trained in advanced searching to handle research needs. The present paper explores the opportunities available for an information professional in an R&D environment and the potential benefit for the organization in the Indian context.

General Terms
Pharmaceutical Industry, Information professionals, Research & Development, Patents

Keywords: Information professional, patent, pharmaceutical, India, Search

1. INTRODUCTION

The library and information professionals in the pharmaceutical sector have an opportunity to play an important role in research. Their training in searching both offline and online resources makes them suitable for advanced searching across resources and technology areas. However, this has not been observed to be true in the Indian industry where most searches are conducted by the research team themselves. Many pharmaceutical companies either do not have a formal library or have a library that is largely not involved in research projects. The industry searches documents in many forms, the most predominant being patents and journal articles besides regulatory and legal information. The patenting scenario discloses that a larger number of patents are being filed to protect the drugs that are being developed and their method of synthesis. Searching patents and identifying the relevant documents, needs training and a fair understanding of the subject as they are complex documents and technical in nature. These patents disclose an initiative by the innovator companies to provide improved and newer products on the market, while the generic manufacturers file patents to create a unique position in the marketplace for their product.

1.1 Indian Pharmaceutical Industry

According to a recent report, Indian pharmaceutical industry was valued at $ 12 billion in 2013 and expected to grow to US$ 100 billion by 2025 and is dominated by

generic products. (Indian Pharmaceuticals Industry Analysis, 2016). The industry is largely focused on exports to both regulated markets such as North America and Europe and non-regulated or less regulated markets including Asia, Eastern Europe and Africa. The products exported consist of both active pharmaceutical ingredient and finished formulations. India exports drugs to more than 200 countries and vaccines and biopharmaceutical products to about 151 countries (Mahajan, 2014).

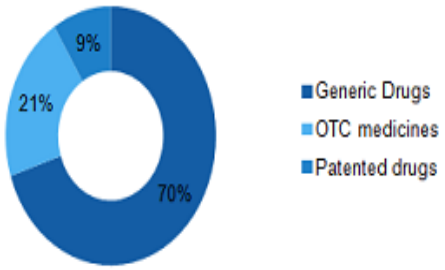


Figure 1: Revenue share in Indian pharmaceutical sector

2. LITERATURE SEARCH

All research projects are preceded by a comprehensive search to determine the opportunities and threats to the project that is to be undertaken. The search determines among others the scope of literature in public domain, legally protected areas by way of patents, applicable regulations, markets that can be accessed and existing and potential competitors. The search also identifies the products that may replace the product/drug under study i.e. it could be a completely new drug or change in dosage forms. All of the above enables the company to decide the way forward on the particular project or a portfolio of related projects.

2.1 *Scope of Search*

The primary objective of search in a research project is to understand the current technology status of the chemical or drug formulation that is to be developed. It also aims to understand the competitor scenario and regulatory requirements that needs to be fulfilled in order to bring the product on the market. Another segment of interest, especially to the leadership team in any organization is the financial information– current market price and price erosion in future when more companies launch similar products or next generation products that could potentially replace the existing ones that are being developed to be launched in the marketplace.

Table 1 summarizes the categories of resources searched and the information that is retrieved from these resources.

Table 1: Types of Resources and Information retrieved

Resources	Information Retrieved
Journal articles	Chemistry of drug, Competitors, Organizations, Drug formulations, Clinical studies
Competitive intelligence resources	Competitors and technologies developed
Commercial publication that disclose company information, related regulatory data and company published information on drug development	Competitor information and their portfolio of existing and new products. Drug prices and profits
Regulatory information (Government bodies & Drug Authorities)	Regulations that govern the drugs
Patents literature	Technical information on drug and its chemistry. Also discloses what is protected by law
Litigation information	Information on whether the chemical or drug is a subject of either patent or commercial litigation
Newspapers, magazines and News sites	General information
Clinical & Health information	Data on clinical studies conducted and their results

3. ROLE OF INFORMATION PROFESSIONAL

The information professional is equipped with the skill to search and retrieve information of varied kinds across multiple resources and platforms. However, it is also true that he may lack the subject knowledge to extract advanced technical information and establish its

relevancy. This is partly due to the fact that many information professionals do not have advanced degrees especially in the Indian context. This is not true in other parts of world where, informational professional possess advanced degrees in various subjects and hence contribute to research. In the pharmaceutical industry especially, there have been information professionals who were earlier involved in core research and then moved to the information field that help them understand the needs of research team.

3.1 *Challenges & Opportunities*

3.1.1 Subject knowledge

The information professional having a basic degree in related area such as chemistry or pharmaceutical chemistry will add immense value to the search efforts with his additional skill sets of information retrieval. The subject knowledge along with experience in the field enables him to present the results as required by the various stakeholders in a research project.

3.1.2 Customers and stakeholders

A research project has multiple stakeholders and customers. They include the research scientists who need detailed information regarding the chemistry, drug formulation etc. while the business development team general is more concerned about the drug development and new products that are in the pipeline and the price. Marketing team on the other hand is focused on the existing and potential market, regulatory requirements and customer information. The management requires most of these information but in a simple and summary format. Thus it can be observed that along with retrieving the information, it is also important to present the information in the required format.

3.1.3 User Training

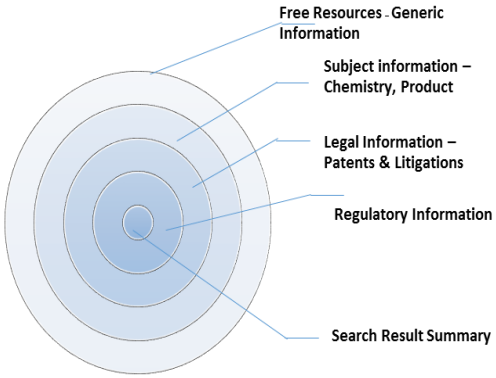
The information professional by virtue of his learning is capable of imparting training on search methodology to the other teams involved in research. This aspect is not much utilized in many Indian organizations. This is of great significance in the pharmaceutical sector where research play a significant role. The information professional can, not only help the team identify the right resource but also efficient utilization of the resources. He could also conduct internal training on effective utilization of free resources and search engines that could be used along with advanced tools to provide a comprehensive result.

4. SEARCH METHODOLOGY

Any search begins with a basic search to identify the concepts related to the information that is being searched and retrieved. In case of pharmaceutical industry, it could begin with a google search to determine the key terms, understand basic concept and current state of the technology. It may also identify the competitors and their existing products.

If one were to consider a search pyramid, this would form the bottom region. This could be followed technical literature search and further strengthened with patent and legal information followed by regulatory information with respect to the drug. A comprehensive search report including all the searched information in a succinct manner could be used as a guide to the research project.

Figure 2: Search pyramid



5 CONCLUSION AND WAY FORWARD

Information, especially technical information is growing exponentially and the spread is only increasing. Although it has been observed that information professionals could make a significant contribution in pharmaceutical research, it is imperative that one equips himself with the required subject knowledge and is well informed about the tools available. This also implies that opportunities for continuing education is essential for an information professionals' growth.

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