

# Design and Costing of Information Services in Academic Libraries

Jude-Iwuoha, Adaeze U and Iwuoha, Anne C.

University Library, Michael Okpara University of Agriculture, Umudike P.M.B. 7267, Umuahia, Abia State, Nigeria.

## Abstract

Libraries are very important in providing information services to its users. The information services provided by academic libraries range from knowledge access and research support to reprographic services and the provision of information skills, aided by on-on-one assistance and advice. The article looked at the information services provided by academic libraries, including building blocks and methods of designing information products and services. The paper further discussed the basic components of costing/ pricing these information products and services and the different pricing methods used by libraries in deciding on the price of the information products and services they provide.

**Keywords:** Information Services, Design, Information Products and Services, Costing, Academic Libraries

## 1. Introduction

A library is an important source of information to students and staff of any academic institution. Prior to the existence of library, information was being transmitted from one person to another, by oral tradition. But with the existence of library, book and non-book materials that contain different types of information are being acquired, organized, retrieved and disseminated to different users. The library is one of several kinds of institutions which have the primary role of acquiring, processing, organizing, preserving as well as conserving the print and non-print information resources or materials for the use of its clientele. (Popoola, 2003).

The essential objective of an academic library is to support teaching and research programmes of the academic community by selecting and designing different information services and products, processing, storing and making them available for use.

To achieve the said objectives, an academic library should:

- Ensure a high degree of relevance of its collection to the needs of the academic Community;
- Ensure that maximum use is made of the resources and facilities it provides;
- Ensure making the use of its resources an integral part of the educational process; and
- Give qualitative reference and information services to its clientele. (Oseghale 2006).

The library has a key role in supporting the academic activities of its parent institution by establishing, maintaining and promoting library and information services, both quantitatively and qualitatively. The library offers a wide range of services from reference to electronic information services to users. Information services consist of personal assistance provided to users in pursuit of information. They are active services provided by libraries in anticipation of user needs. Such services include Current Awareness Service (CAS), Selective Dissemination of Information (SDI), mediated online search services, Newspaper search services, etc. Tihamiyu (1993) noted that "Information services are discrete, real time events or activities designed to express, convey and transfer information". Such information services include news broadcast, user interaction with an online system, or lectures presented. Information services are invariably time-based, and are also usually time-valued. However, these services however are not without associated cost/price implications.

Costing or pricing is the placing of monetary value on a commodity. As stated by Nwalo and Oyedum (2007) "Pricing as one of the means of marketing is usually applied to information services by the library or information centre. This list should be prepared bearing in mind the cost of maintaining equipment and infrastructure".

However, in doing this, moderate price should be considered.

In ideal circumstances, a modern academic Library should strive to play leading role in the teaching, learning, and research activities of its parent institution. It should be dynamic and aggressive in its provision of information services bearing in mind: the proliferation of primary document, increasing specialization in all branches of knowledge which is becoming more multi-disciplinary in nature; and the increasing need for quick access to the vast amount of information.

## 2. Information Services Provided by Academic Libraries

Information is mankind's accumulated knowledge and wisdom derived from all subjects, in all forms and from all sources that could help its users to reduce their level of uncertainty (Ifidon, 2005). Information can be seen as tangible goods (products) because it can be seen physically and handled and intangible (services) because it cannot be seen but it can be felt. A service is the provision of work, accommodations, or ministrations desired by a customer. Consumers pay for a service as they would for a product. Services must be planned and developed carefully to meet consumer demand (Nwalo and Oyedum, 2007). Information services are those library services that are aimed toward providing the patrons with the right information needed to accomplish a task or for decision making or reduction of uncertainty level Issa, et al. (2013). Information services are needed to provide information not only on demands but also in anticipation of its use. An information service must meet the information needs of the users; therefore, librarians must know their information needs so as to serve them better.

The information services offered by an ideal academic library which are geared toward supporting the objectives of the parent institution- teaching, learning and research include: Reference service, Current Awareness Service, Selective Dissemination of Information, Document delivery, Photocopying and Printing services, User education, Information repackaging, Information display and notification services, Database search, E-mail alerts, SMS alerts, Instant messaging, VoIP, Social media, and Ask A services (e.g. Ask A Librarian, Talk to Librarian, Chat with Librarian, i-Librarian) (Issa, et al.,2013). In a similar vein, Poopola (2007) listed the following as information services offered by academic libraries:

- Reference or referral services,
- Photocopying service,
- Current awareness services,
- Selective dissemination of information,
- Bindery and lamination, Consulting services,
- Indexing and abstracting services,
- Loaning of information materials,
- Documents delivery service,
- Statistical data analysis,
- Postal or courier service,
- Telephone/telex services,
- Facsimile service, Internet/E-mail services,
- Computer word processing,
- Translation, Video rental,
- Technical writing,
- Information broking,
- Microfilming,
- Software production.

Information products and services go hand in hand in the sense that when a document delivery service is rendered to a user for example, the document delivered becomes a product to the end user. However, in classifying information products and services, Oyekunle and Tiamiyu (2010) following McLaughlin and Birinyi (1980), categorized information products and services as:

- (a) Content Products: are physical entities that can hold information until it is needed (e.g. books, newspapers, etc).
- (b) Conduit Products: include pieces of equipment used to facilitate processing and transfer of information (e.g. computer and telecommunication equipment).
- (c) Content Services. Content services are intangible time-based activities that are performed to simultaneously create and deliver information to clients. They are often expected to convey information immediately to users as the information is produced, that is, in real time. Examples are indexing and abstracting services, broadcast services, data collection services, management consultancy services, help desk services and so on.
- (d) Conduit services: do not produce information themselves, but provide channels for the communication or transfer of information across time and space. They are provided through computer and communication equipment and infrastructure to enable consumers to create access or exchange information. Examples are Internet service provision, telephone services, printing services, etc.

Information services are intangible commodities and are more difficult to sell than the physical products. Therefore, academic libraries must develop information services appropriate to its community bearing in mind the goal of information services which is to provide the information sought by the user. Information service should anticipate as well as meet user needs. It should encourage user awareness of the potential of information resources to fulfill individual information needs.

### 3. Design of Information Product and Services

To design refers to the process of originating and developing a plan for a product, structure, system or component with intention. The person designing is called a designer, which is also a term used for people who work professionally in one of the various design areas, usually also specifying which area is being dealt with.

According to Dino Dini (2005), design underpins every form of creation from objects such as chairs to the way we plan and execute our lives. For this reason, it is useful to seek out some common structure that can be applied to any kind of design, whether this be for video games, consumer products or one's own personal life. Dino Dini notes further that the word design is often considered ambiguous depending on the application. For instance:

- Design and Art
- Design and Engineering
- Design and Production

**Design and Art:** Design is often viewed as a more rigorous form of art, or art with a clearly defined purpose. Design is often distinguished from Art when someone other than the artist is defining the purpose.

**Design and Engineering:** Engineering is often viewed as a more rigorous form of design. The American Heritage Dictionary defines design as "To conceive or fashion in the mind; invent" and "to formulate a plan", and defines engineering as "the application of scientific and mathematical principles to practical ends such as the design, manufacture and operation of efficient and economical structures, machines, processes and systems".

**Design and Production:** Design involves problem solving and creativity. In contrast, production involves a routine or pre-planned process.

The packaging of an information service is usually performed with a specific consumer or user group in mind. According to Tiarniyu (1993), users value an information service depending on how the designer of the service is able to : customize the service for a target group of users by optimally integrating the attributes of information symbols, principles and styles for organizing information media; real-time pragmatic factors and important target contextual factors; and thereby remove or overcome situational barriers to users knowledge and the actual use, of the service as a source of information by a target group of users. The designer of an information product must strive for a perfect fit between information symbols, information medium/channel/technology and the target context factors by effectively using linguistic and artistic rules and styles, and by paying due consideration to the pragmatic and real-time factors. (Tiarniyu, 1993).

### 4. Building Blocks for Designing Information Products and Services

Tiarniyu (2005) elaborated that the content, technological and other attributes of information products are the building blocks for designing information products.

- a. Content attributes: the content attribute of information products can be designed in several important ways, including :
  - Subject: This pertains to the idea, information, or knowledge conveyed by the product. It could be in terms of discipline, economic sector, socio-economic group of people, time period, geographical location etc.
  - Primary versus secondary nature of content
  - Data symbols used for composing the content: The data symbols could be textual, numerical, pictorial, sound/audio, video or combination of two or more data symbols. Tiarniyu (2005) notes that the data symbols used in current information products are designed to target users' sense of sight, hearing and touch and forecasts that ultimately designers of information products would also target user's sense of smell and taste.
  - Language: The content attribute of information products can be designed from the type of language used, whether natural, computer software languages or cataloguing and indexing systems language.
  - Data versus control features: This refers to the extent to which the content of a product is intended to either provide end-use information to users, or to assist users in accessing, transforming or interpreting some data to be provided by the users themselves.
- b, Technology and media attributes: information products may also be designed in terms of technology for their production and use. (Tiarniyu, 2005). The

technologies could be human/manual, mechanical or electronic. Also different support technologies such as reading glasses, earphones, computer systems and monitors could be required so as to facilitate reading, viewing, listening to or use of different information products. The technology is usually intertwined with the media in which the content is stored or delivered to users. The media include: humans, paper, computer media, microforms, audio-visuals, audio/video tapes and disks, communications channels, etc.

## 5. Methods of Designing Information Products and Services

Most libraries use the following methods to design a market mix for ensuring a catalytic role in the modern information community (Madhusudhan, 2008):

- a) product development;
- b) physical distribution of information;
- c) promotion of products and services; and
- d) price.

### Product Development

A product is anything that can be offered to a market to satisfy a need. An assortment of materials, services and programmes constitute the library's products. A library offers goods, either tangible (e.g. books and Internet access) or intangible (e.g. personal assistance, or value of the library as a premier community institution). Madhusudhan (2008), quoting De Aze (2002), says that "products and services which provide for users and which answer users most important information and information related needs are the core business of the library and information services". Madhusudhan (2008), quoting Seetharama (1998), considers that without products and services, no organization has reason to exist, there would be no task to perform; Hence, product is the most important factor in marketing. And Madhusudhan (2008), quoting Weingand (1995), asserts that the library's product can be arranged within a three dimensional structure of the product mix, product line and product item. Programmes of a library are product lines whereas product items consist of bibliographic instruction, displays and lectures.

### Physical Distribution of Information

Madhusudhan (2008), describe acquisition as getting the raw materials and sending that out. University libraries acquire documents as gifts from different donors. To fill in the gaps in the collection, university libraries also have exchanged relations with other universities, they also lends materials to clients, locally and through inter library loan (ILL). Students, faculty members of affiliated colleges or universities, and research scholars from different universities/ institutions can use the university library's collections.

### Promotion of Products and Services

The services that university libraries offers must be made known to as many users as possible, so that they think of the library when they need information. The promotion plans used by university libraries can be in form of publicity. Wide publicity is given to the products and services of University Libraries by various advertising methods. e.g., local newspapers and magazines are used for dissemination of information related to the various programmes and activities being performed by university libraries including the specific ventures such as conducting of the workshops/ seminars/ refresher courses. The libraries conducts extension activities on various occasions such as National Library Week, Year of the Books Programme etc. Wide publicity are also given for all the training programmes conducted by university libraries in the field of information technology, library automation and networking.

**Price:** Price is important in marketing in the world of information as it is elsewhere. Madhusudhan (2008), quoting Kotler (1983), highlights the 4P's of marketing as product, place, pricing and promotion. He argued however that the 4P's are a seller's paradigm and should be replaced with the 4C's of the buyer: Customer value, user convenience, user Cost and user Communication. Price is often expressed in currency. In the library, price can be used to express the value of information services: a physical product like CD-ROM or a fee for a service or membership. Price can also be used to balance supply and demand, to be a stimulus, and to distribute income [Madhusudhan (2008), quoting Rowley (2001)]. Joseph and Parameswari (2002) defined pricing as the marketing activity that determines the price of the product on the basis of costs as well as market factors such as distribution channels, discount structure, competitors prices, ability or willingness of customers to pay, and so on. They further highlighted the questions to ask during pricing. They are:

- i What are the costs involved in the generation of services and products?
- ii What factors need to be considered in arriving at costs?

- iii Should the information products/services be given free? If so, to whom and why?
- iv What would be the impact in relation to the value of a product , if given free?
- v What should be the criteria for pricing?

Prices can take into account the actual costs of producing the product, competitors' prices, the going market price, the purchasing characteristics of the target market, and the value of features and benefits provided by the product to the selected market. Other aspects include whether there will be a loss leader, discounts, rebated, credit- what will be the break-even point (that is, the point at which all costs are recovered and you begin to make a profit (Raitt, n.d.). Actual costs will include such items as the development costs, production and distribution costs, marketing and advertising costs as well as overheads.

Price is a means of exchange offered by a buyer for buying the products/service being marketed by a seller/marketer. It is generally expressed in currency units, such as naira. However, it may also be expressed in services or other goods which the seller and buyer may agree to exchange for the item (Vespry, Vespry and Avery, 1998). Kinnear and Bernhardt (1986) noted that price (or the value of an offer) goes by many names like tuition, rent, interest, fee, fare, dues, salary, wage or commission depending on what is being exchanged. For information products and services, the relevant terms may be price of a physical product like CD-ROM and fee of a service. Concerning the price that can be charged, Vespry, Vespry and Avery (1998) posited that, it may depend on the ability of the target segment to pay, as well as the value that the target segment might derive by using the product/service. Further, the value of the product/service varies, depending on the situation and time of availability. Besides, the information centre and/or management of the organization may view price in a variety of ways, including generation of revenue/profit depending on the situation of the information center/library.

## 6. Costing of Information Products and Services

The primary goal of most businesses is to make a profit. There are many factors that affect the profitability of a business, such as management, location, cost of labour, quality of product or service, market demand and competition. Market demand controls the response to a product or service. U.S. Small Business Administration(n.d.) emphasized that:

“You must understand the market for your product or service, the channels of distribution and the competition before you establish prices. You must know all costs and carefully analyze them. The marketplace responds rapidly to technological advances, international competition and a knowledgeable buying public. You must constantly keep abreast of all factors that will affect pricing and be ready to make necessary changes”.

Costing is the process by which an organization obtains estimates of the costs or monetary values for producing a product, providing a service, performing a function, or operating a department (Popoola, 2000).

Writing on the costs and cost-effectiveness in library service, Popoola (2005) avers that the identification of cost is often the first task in the process of valuing an information service or activity. He further noted that the costs which a library manager is concerned with are working costs- the total costs of the service, unit costs, average costs and costs of particular operations. Ifidon and Nwalo (2003) quoting Edeka (1991), listed the cost elements to include running cost, equipment maintenance cost, equipment and staff time, and expected profit. In allocating costs to information products and services, the librarian should carry out a thorough cost analysis which must include purchasing or licensing costs and operational costs, such as the cost of selection, ordering, cataloguing, shelving, checkout, networking, printing, associated reference questions, instruction, technical support, and maintaining related web pages and links. In addition, such analyses must be repeated to keep abreast of changes.

## 7. Components of Costs for Information Products and Services

According to Raitt (n.d.), the pricing of products and services consists of basic components;

- i The overall creation cost (which include development and overheads);
- ii The incremental unit cost (e.g, printing a book or mastering a CD-ROM);
- iii Promotion and distribution costs;
- iv The value that has been added by the features, benefits or service; and
- v Desired profit.

All of the above basic components of pricing information products and services have to be recovered from sales.



Popoola (2005) also pointed out the following costs associated with the provision of library and information services.

- a. Capital cost:** This is the expenditure incurred on items which will serve over a long period of time. These include the cost of land and building, machinery and equipment, furniture, transport and vehicles, all adding to fixed assets. This cost needs to be recovered over a period of years in the form of depreciation and included in the operating cost.
- b. Fixed costs:** These are costs which are fixed per time period and do not vary with the volume of production of a service or product, for example, wages and salaries of employees in the information centre/library (who are paid on a monthly basis) are fixed costs (Vespry, Vespry and Avery, 1998).
- c. Variable cost:** Variable costs are costs which vary with the volume of a product /service. It includes temporary labour wages and the cost of materials used in the library.
- d. Direct (Prime) cost:** This is the cost of materials, labour and expenses which contribute directly to the production of library information products and services. All other expenses are treated as overhead cost. The cost of information source materials, cost of information storing and processing equipment, salary and wages are direct costs.
- e. Indirect (Overhead) cost:** Includes all costs other than direct materials and direct labour. Usually there are people on a library's payroll who perform support services that are not charged as direct labour but must be included as a cost. Examples of these services are clerical, depreciation, rent, legal costs, utilities and transportation, and so on. U.S. Small Business Administration. (n.d.) They are costs incurred in the cause of providing information services to the users. They are not directly linked to the information product or service provided.
- f. Marginal cost:** The cost resulting from the addition of the last unit output. It is the ratio of the increase in cost to the increase in output for a small increment in output (Jotwani and Haravu, 1993).
- g. Depreciation:** This is the allowance made for decrease in the value of land, building, machinery, transport and vehicle due to obsolescence, wear and tear. Hence, the costs of these items are spread over their expected life span for the purpose of calculating annual depreciation. This helps in recovering the cost for making future replacement and in justifying expenditure on equipment.

Fixing prices to information services is complex and needs caution. Adetoro (2003), quoting Crawford (1998), warns that pricing information services is difficult because it is not always possible to predict how much effort a particular information task requires. However, it is pertinent that information pricing and marketing are carried out to achieve the following objectives:

- i To recover running cost;
- ii To recover equipment maintenance cost;
- iii To make up for shortfall in subvention from funding authorities; and
- iv To earn some money for the overall library improvement.

## 8. Pricing Methods/Strategies in Libraries and Information Centres

In the context of information products and services, pricing options could be generated for information products, information services, information projects, for specific purposes, and memberships of various types.

Jotwani and Haravu (1993) and Vespry, Vespry and Avery (1998) highlighted a variety of pricing methods to meet a given pricing objective. These are:

- a. Cost-based Pricing:** this refers to price set largely or even entirely on the basis of the costs. Typically, in cost-based pricing, all costs are included, usually with a somewhat arbitrary allocation of overheads made on the basis of operating levels. For instance, all cost incurred in designing Current Awareness Service will be added to make up for the charge of Current Awareness Services in any library.
- b. Competition –based Pricing:** when a product or service is priced by being based on what other organizations are charging for same product/service. The basic options are: (i) to match the competitors price, (ii) be less by a certain percentage, and (iii) be more by a certain percentage. This applies more in the case of similar competing products and services. For instance, if cyber cafes are charging hundred naira for photocopying services, academic libraries that also renders the service will charge based on the price of those Cybercafes either a little bit below or little bit above.
- c. Customer Value -based Pricing:** In this approach you first assess the value (both real and perceived) of your offer to the specific customer/target group. You could then decide to charge a price which is either equal to or lower than the value (perceived) realized by the customer group. For example, if library users value Selection Dissemination of Information services so much, much price will be added to the service because they will still come for the service whether the cost is high or low.

- d. **Demand-Based Pricing:** This pricing method looks at the intensity of demand on the open market, rather than the level of cost to set a price. It is pricing based on what the consumer will bear or on what the perceived value of the product/service is. Lower prices are charged when or where demand is weak and higher prices are charged where demand is intense, even though unit costs may be the same in both cases. Example, if the demand for consultancy service is high in an academic library, definitely the price will be high.

Adetoro (2003) stressed that, pricing strategies must be developed as a final process to decide whether the price will be place, time or client dependent. It must also include the type of discount that needs to be given and how the pricing system is affected by government regulation or legislation.

Introducing the concept of pricing of information products and services, particularly in libraries is a difficult task. Both the customers as well as the staff, not only find it difficult to accept, but in several cases actively oppose such moves. However, the changing and increasing complex needs for information of clients, and the need to generate funds to provide the required products and services, make it essential for libraries to devise ways of generating financial resources through charging the users, so as to achieve their goals.

## 9. Conclusion

The core objective of the academic library is to support the academic programmes offered by its parent body and the library may evolve its collection and services mainly to reflect the curriculum requirements of its users. Information services in libraries take different forms including direct personal assistance, exchange of information culled from a reference source, readers' advisory service, dissemination of information in anticipation of user needs or interests, access to electronic information, etc. Besides, the library may design a system to deliver its products and services to attract more users. The academic library should add value to information which is not immediately useful as presented in its source simply by sorting and packaging the information; reviewing and analyzing it for the patrons as appropriate. In addition, the library should develop information services appropriate to its community bearing in mind the information seeking behaviours, the information needs, and the service expectations of the academic community it serves. Ultimately, provision of information in the manner most useful to its clients is the test of all a library does.

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