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## Information pricing: the development of a product- and pricing concept for the research centre of the Public Library Cologne

### Abstract

The project Information Pricing was carried out during the summer semester 2004 by four students and two lecturers.

Aim of the project was to develop a new product- and pricing concept for the research centre of the Public Library Cologne. The intention was to increase its competitiveness, especially in the business customer segment. The initiating factor for the project was the significant decrease in requests from 1997 to 2001.

This paper describes the development of different attributes of information, analysing various pricing concepts of private and public information providers as well as the development of a pricing concept which is aligned to the requirements and performance of the research centre. The final result was an improved pricing system for an enhanced range of products.

The first step was getting more familiar with the characteristics of information and the methods that can be used to measure the value of information. One of the key issues to consider is the value of information for a customer and the question how this value can be charged. In order to be capable of evaluating all issues of information pricing and to develop a solid pricing system, it was essential to analyse and assess pricing modules based on their intension of use. For example, the differentiation of the pricing concept with regard to certain user segments like business or private users as well as members and non-members. Another option is to define prices dependant on the requested response times for research tasks and thereby reflect the urgency of those tasks directly in the pricing concept. Furthermore, the qualitative and quantitative differentiation of information has to be taken into account. All described approaches - and also combinations of these - should be considered when developing a new pricing system.

It is also important to recognize the special role of the research centre as a part of the public library. Libraries fulfil a public contract for their users. In this case it has to be ensured that people of all social backgrounds have the chance to gain access to all kind of information. While presenting results to the Public Library Cologne some problems arose, mainly the gap between theoretical and practical feasibility. The final result was a practical pricing system,

which is easy to implement for the research centre and which is described in the following paper.

### Introduction

For the last fifteen years the Public Library Cologne has been offering a research service by professionally trained personnel focussing on request enquiries in professional databases.<sup>61</sup> This service is offered especially to private users, to free-lancers and to small and mid-size companies concentrating on the region of Greater Cologne. So far users had to be registered and had to possess a library card. Since 1997 the library has noticed a significant decrease in the number of enquiries. This was primarily traced back to the increasing amount of free services in the internet and the improved quality of end-user database tools like those at GBI<sup>62</sup> or Genios<sup>63</sup>.

In addition to a decline of enquiries, increasing financial and human resource restrictions, created the need for further income sources for public libraries. The method of market penetration is a reasonable strategy because it minimises risks. The main target of the project Information Pricing therefore was to work out a proposal for an attractive product- and pricing concept in order to keep the research service close to the market. In this respect the pricing structure had to be customised to fit the needs of the market, to increase cost recovery and to enlarge the focus on the target group.

The purpose of the project was to gather information about the characteristics of information services, the methods of pricing and the analysis of existing price models commonly applied.

### Characteristics of the various information services

Next to the three classical factors of production: work, capital and ground, information nowadays is considered the fourth factor of production. Up to date information is a key factor for innovation and competitiveness of modern companies. They especially need information about markets (market data, market volume and market share), worldwide competitors (major players) and production techniques, patents, products and strategies. "This is why information has reached the same level of importance as material, financial or human resources".<sup>64</sup>

In order to provide a customer with the most valuable information it has to be suitably prepared. To guarantee a high value added outcome. One major approach is to convert the information into a machine readable format, e.g. inverting or automatic indexing. To ease the retrieval and increase the value. In addition an abstract compresses the contained information which is a further value-add.

Information is an immaterial good. It is not gone when consumed. On the other hand its value can not be measured before it is used. For instance journalistic information provided as articles is a pure experience good that is usually purchased frequently by a consumer who acquires information on it through repeated purchase. Its quality can only be measured after

<sup>61</sup> [www.stbib-koeln.de/angebote/info.htm](http://www.stbib-koeln.de/angebote/info.htm)

<sup>62</sup> [www.gbi.de](http://www.gbi.de)

<sup>63</sup> [www.genios.de](http://www.genios.de)

<sup>64</sup> Mantwill, Gerhard J. (1997) Informationswirtschaft und Standort Deutschland. Nomos: 16

consumption. This intransparency makes it hard for the consumer to estimate its value in advance and therefore complicates his willingness to pay.<sup>65</sup>

### Special aspects of information pricing

Most properties and consequently the pricing of information differs significantly from common goods and services. In most cases an information service provider cannot guarantee that specific information can be offered. Several reasons are:

- it is not available
- it is available but cannot be accessed
- it cannot be found
- it cannot be quantified in advance

This is the reason why a customer finds it hard to develop a feeling for an acceptable price. Service providers from other industries can base their pricing on tangible values. For instance a tax consultant takes the yearly turnover as a measure, while a lawyer considers the value of a claim. Comparable models of pricing do not exist for information services.

On the contrary to material goods the price of information cannot be determined by the cost of its production per unit but rather its primary creation. This is based on the fact that information can be reproduced simply by copy, which only produces costs e.g. in terms of paper and copyright fees.<sup>66</sup> Therefore information pricing is a far more complex matter.

Also the same information can have a completely different value for different costumers. In addition the information provider will in most cases not be able to judge this value depending on the customer, especially since he himself will probably not know.

The value can also be critically influenced by the time the information is created, delivered and can be used. All these examples show how a subjective matter pricing is.<sup>67</sup>

#### Information as a product

Information is a virtual product which consists of a multitude of single services necessary for its production. In which way these services are bundled is determined individually by the customer. This means that an information is specially produced and assorted for the end-user. Therefore the end-user benefits directly from the service.<sup>68</sup>

### Price differentiation

In order to develop an attractive and applicable pricing model for the Public Library Cologne common methods of price differentiation as to be found in economic literature were

<sup>65</sup> Gerpott, T. J.; Schlegel, M. (2004) Preisplanung für die Mehrfachverwertung journalistischer Online-Inhalte. *Controlling*. 2004(1): 5-12

<sup>66</sup> Stock, W. G. (2000) *Informationswirtschaft: Management externen Wissens*. Oldenbourg. (Managementwissen für Studium und Praxis): 36-38

<sup>67</sup> Georgy, U. (2002) Der Wert von Information: Thesen zum Thema. *Wolfenbütteler Notizen zur Buchgeschichte* 27(2): 273-275

<sup>68</sup> Bußmann, I. (1998) Produkt- und Leistungsbeschreibung für Bibliotheken. In: *Wege zu einer bibliotheksgerechten Kosten- und Leistungsrechnung*. Dt. Bibliotheksinstitut. (Dbi-Materialien; 167): 123 f.

analysed<sup>69</sup>. According to Helmedag, price differentiation describes the phenomenon that one good can be sold at different prices not depending on higher or lower costs to produce them.<sup>70</sup>

One assumption for price differentiation is an inchoate market which allows a segmentation of customers into different categories depending on their willingness to pay a certain price for a service or good.

Also splitting the market of a product for instance by offering the same main product in different stages of quality is an interesting aspect of pricing if this can increase revenues.

Any measure taken, whether it is segmenting or price differentiation, always has to consider that it will only increase profits if their implementation costs are less than the benefits they produce.<sup>71</sup>

Profit oriented institutions will apply a differentiation of prices as a method of flexibly adapting to a changing situation in competition.

Segmenting, this means a differentiation by certain factors is a kind of classification in price differentiation. The following forms are common:

#### Geographical price differentiation

Pricing is based on the geographical situation and varies thereafter. For customers of a library this would mean e.g. that the price for a service is influenced by its residence. This means that services offered to customers from Cologne and its surrounding area could be less expensive than e.g. for customers from Hamburg.

#### Personal price differentiation

Pricing is based on the allocation of the customers to different categories. Segmenting can take place e.g. by soziodemographic, social or purchase behaviour characteristics, which differ tremendously by students, enterprises or private users. Also a differentiation between members and non-members of a library could be assigned to this form of price distinction. The criteria chosen should be founded on objectivity.

#### Temporal price differentiation

This form is primarily used if temporarily differing demand situations exist for a product. It subsumes both the differentiation by form of delivery (e.g. normal supply or express) and by time. So services e.g. can be offered less expensive during vacations, in order to achieve an even utilisation of capacity.

#### Quantitative price differentiation

The quantitative price distinction considers the amount of results produced and/or delivered. For example, quantity based discounts result from this approach, which is often found in a libraries document delivery service.

<sup>69</sup> Meffert, H.; Bruhn, M. (1997) *Dienstleistungsmarketing*. 2nd ed. Gabler: 410-412

<sup>70</sup> Helmedag, F. *Preisdifferenzierung*. [online]. Available from: [www.tu-chemnitz.de/wirtschaft/vwl2/downloads/paper/helmedag/Preisdifferenzierung.pdf](http://www.tu-chemnitz.de/wirtschaft/vwl2/downloads/paper/helmedag/Preisdifferenzierung.pdf) [Date accessed: 3. Nov. 2004]

<sup>71</sup> Brandtweiner, R. (2001) *Report Internet-Pricing: Methoden der Preisfindung in elektronischen Märkten*. Symposium Publishing GmbH: 74 f.

## Qualitative price differentiation

The qualitative price differentiation determines the price definition according to the arrangement of the services and/or products. The product is offered in different versions, and is thereby a close correlation for product differentiation. Here different customer groups are to be addressed by differently minted quality classes. A common example is a car, which is offered in different motorisations and interior designs. But the capacity, also the efficiency or different additional services cannot by itself determine the price.<sup>72</sup>

## Price bundling

Price bundling is another method to define a price. By partially adding or removing products the whole product range is altered which can allow a more differentiated pricing. With this model products are either offered alone or in bundles, each with a fixed price. In most cases the bundle price will be lower than the sum of all single product prices added up although this must not necessarily be the case. There are two forms of bundling, mixed bundling and pure bundling. In the later only bundles are offered.<sup>73</sup>

## Analysis of the current cost situation at the Public Library Cologne

The Public Library Cologne provides access to over a million sources of media, in print and digital form, online and offline, audio, video and multimedia. In Germany public libraries are not self financed and have a public objective to fulfil. This objective incorporates reporting to municipal administrations and councils.

In order to live up to the necessities and standards of modern information markets a library permanently has to invest in new, often costly technologies. On the other hand public spendings for the Public Library Cologne are cut. In order to come up with the finances needed it largely depends on own income. One way is to take in fees for certain services like checking out media, research service, online trainings, sponsoring or advertisement.<sup>74</sup>

In 2002 the Public Library Cologne had a budget of 12.6 million Euros per year and reached a 15% degree of cost recovery.<sup>75</sup>

Measuring actual costs for certain library services is one of the more complex tasks in library management. In Germany this cameralistic evaluation is done by comparing the budget with actual spendings. Informations about specific service-bound costs, like information retrieval, are not taken into account and therefore will not be determined from such reports.

The costs involved in delivering a service for a non-profit-organisation like the Public Library Cologne include production- and sales cost. These are the basis of pricing. This shows

the necessity of a service oriented cost allocation. A research service therefore is split into the following single services:

- order acceptance
- topic definition
- (database-) search
- result compilation
- delivery

The following relevant cost elements were taken into consideration for the analysis of the current cost situation of the research service:

- Personnel costs
  - How much time is spent on a single search on average?
- General costs
  - Which costs evolve from material, communication, accommodation and maintenance?
- Media costs
  - Which costs evolve from the use of databases (licence, pay per view)?

Non-profit-organisations like the Public Library Cologne can apply these single service oriented calculations to increase cost transparency and monitoring.<sup>76</sup>

The tight schedule of a semester made it impossible to fundamentally research the topic of information pricing on a broad basis. This why not all aspects of pricing could be taken into respect. Therefore a questionnaire concerning the willingness of customers to pay a certain price had to be omitted. Instead common pricings of other information retrieval service providers and comparable institutions were gathered and compared.

## Pricing concepts utilised by database and information providers

In the following section pricing concepts of multiple providers are matched with certain forms of price differentiation in order to get an idea which concepts have the best chance to be fit for market.

This comparison was based on pricing concepts from private, semi public and public database- and information providers. Besides five private information brokers<sup>77</sup> the FIZ-Karlsruhe<sup>78</sup>, FIZ-Chemie<sup>79</sup> und FIZ-Technik<sup>80</sup> as well as the Sächsische Landes- und Universitätsbibliothek Dresden (SLUB Dresden)<sup>81</sup> and the Hamburgische Welt-Wirtschafts-Archiv (HWWA)<sup>82</sup> were selected as representatives of semi-public and public institutions for a comparison.

As a first result it was found that all considered models vary strongly. Semi public and public providers often favoured a personal or qualitative price differentiation. The FIZ

<sup>76</sup> Ceynowa, K. (1998) Die Kosten bibliothekarischer Tätigkeiten und Dienstleistungen. In, Wege zu einer bibliotheksgerechten Kosten- und Leistungsrechnung. Dt. Bibliotheksinstitut. (Dbi-Materialien; 167): 41-44

<sup>77</sup> www.infobroker.de, www.art-und-data.de, www.i2k-services.com, www.informationbutler.de, www.conquip.de

<sup>78</sup> www.fiz-informationsdienste.de/de/DP/Recherchedienst/preise.html

<sup>79</sup> www.fiz-chemie.de/service/recherchen.html

<sup>80</sup> www.fiz-technik.de/fiz/dienste/rechdienst-startseite1.htm

<sup>81</sup> www.tu-dresden.de/slub - Fachinformation - Literaturrecherchen in Ihrem Auftrag - Sächsische Bibliotheksgebührenverordnung - Anlage Gebührenverzeichnis Punkt 3

<sup>82</sup> www.hwwa.de/hwwa.html - Informationsservice - Preise

<sup>72</sup> Skiera, B. and Spann, M. (2002) Preisdifferenzierung im Internet. In, Roadmap to E-Business: Wie Unternehmen das Internet erfolgreich nutzen. Thesis: 270 ff.

<sup>73</sup> Brandtweiner, R. (2001) Report Internet-Pricing: Methoden der Preisfindung in elektronischen Märkten. Symposium Publishing GmbH. 97 f.

<sup>74</sup> Speech held by Mrs Christina Tiedge on 29. Oct. 2002 [online]. Available from: www.stbib-koeln.de/profi/stadtteilbibliotheken.htm

<sup>75</sup> Speech held by Mr Frank Daniel on 7. May 2002 [online]. Available from: www.ekz.de/files/Fachstellenkonferenz\_Mai\_2002\_Daniel.ppt

Karlsruhe is a good example for this. Here a qualitative price differentiation was used for short-, standard and special retrieval requests while a personal price differentiation was applied for students, college students and civilian and military service personnel.

Private providers often favoured a temporal or quantitative price differentiation. This comes as no surprise since private information brokers often focus on companies and less on a single customer (person). This is why a personal price differentiation would make very much sense here.

Time-based criteria are of a far higher importance for private providers, since they are more dependant on economic factors in terms of making use of their resources. In these cases, services usually are not subsidised.

For example, the private provider InfoBroker determines individual prices depending on the source of information (company, market or database research) and the providing countries. The outcome is a very complicated and often incomprehensible price list.

On the other hand art-und-data only differentiates by the kind of research: online, internet or offline research and an amount-based pricelist depending on the kind.

The SLUB Dresden and the HWWA were chosen for a direct comparison with the Public Library Cologne since they had the most factors in common in terms of research requests.

Pic. 1: Comparison of prices

	Other users e.g. companies	College / library members	College students / students / users entitled for reductions
SLUB Dresden	40 € per 60 minutes begun	25 € per 60 minutes begun	15 € per 60 minutes begun
HWWA	26 € per 15 minutes	13 € per 15 minutes	13 € per 15 minutes
StBib Köln	---	15 € per 30 minutes begun	10 € per 30 minutes begun

This table shows that the Public Library Cologne offers its services far cheaper, perhaps too cheap, in comparison to its competitors.

### Pricing model developed for the research centre of the Public Library Cologne

It was agreed upon to apply the personal, qualitative and quantitative price differentiation. In order to present a concept based on sustainable numbers, first the actual fixed costs of the research centre had to be obtained from the Public Library Cologne.<sup>83</sup> These included wages of skilled employees of the salary grade BAT-IVa<sup>84</sup>, shares in costs for the building and infrastructure as well as general costs for providing, preparation and billing.

<sup>83</sup> Personal e-mails from Mr Frank Daniel (Public Library Cologne). 27. Apr. and 28. May 2004  
<sup>84</sup> BAT: German civil service pay scale

The pricing model developed differentiates between companies and private users in terms of personal price differentiation, as well as members and non-members of the Public Library Cologne.

A new aspect is that also non-members will be allowed to profit from the services offered, only that a slightly higher fee will be charged with each request.

A qualitative differentiation is applied to email-, short- or standard requests. Currently email requests are already offered as a free service by the Public Library Cologne. The content of this offer, which also by the new model is for free, has been cut down in order not to create a competition to cost bound services. This means that it should not take longer than five minutes to be answered, only answer questions concerning the stock of the library and only produce validated references. The aim is to offer a fundamental service for everyone.

Strong emphasis was put on the temporal differentiation. Up to now requests were handled within two working days. The new model includes an express service producing results within one working day. Therefore the time-based price includes a 100% increase in comparison to standard requests.

Additionally other new services, like monitoring, were added. Monitoring is synonymically used for SDI (Selective Dissemination of Information Service), subscription-research, alert and profile services. This means that a request is repeated periodically. Monitoring offers aim at a long term binding of customers. Repetitions of requests are far less costly than single ones.

In the early stages of the pricing model development it was discussed whether or not additional differentiations and services should be included. For instance there was the idea of a special request increasing the value of the service for the customer by adding a delivery service as well as a management summary. With this approach the focus was widened to professional customers like companies.

It was soon noticed though that this would create a competition between the Public Library Cologne and private service providers which for legal reasons alone was not wanted. Therefore this idea was abandoned.

Pic. 2: Pricingmodel developed

	Private	Companies
Short request	fixed price (<30 min. standard research) within 4 hours. approx. 15 min. research time 20 € produces lists (e.g. addresses) produces lists of literature, link lists	fixed price (<30 min. standard research) within 4 hours. approx. 15 min. research time 40 € produces lists (e.g. addresses) produces lists of literature, link lists
Standard request	standard request (25 €/30 min.) results within 3 working days or to date express request (50 €/30 min.) results within one working day	standard request (50 €/30 min.) results within 3 working days or to date express request (100 €/30 min.) results within one working day

Also the pricing model was supposed to be kept simple. Too complex solutions often fail because of misunderstandings and far higher costs in terms of handling, and training of employees.<sup>85</sup>

As a summary this project showed how difficult it is to apply models derived from private providers to public institutions when economic aspects have to be considered.

Public institutions often are restricted in possibilities and bound to certain municipal guidelines. Additionally most decisions can not be made by the institution themselves. Besides all economic aspects there is a public interest which has to be taken into respect.

All the same it was found that even within these restrictions it is still possible to adapt some of these approaches to semi-public and public research facilities to derive an applicable pricing model based on economic guidelines.

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