

Automatic Price Comparison Services: A global study

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***Abstract:** Price comparison services are being used by more and more internet users worldwide to compare prices of (online-)suppliers. The characteristics of price comparison services differ internationally. Not only are they different in the reference to their scope of work. Also with regard to the technical performance or the definition of the revenue concepts great differences have been assessed. In the course of this essay criteria for global price comparison services are elaborated which are then consulted in conclusion for the construction of development categories. After reviewing of a variety of international price comparison services it turns out that classic concepts don't suffice in assessing development standards. A new concept is established which serves the global market analysis for successful price comparison services and those striving for progress. 50 countries with altogether over 230 price comparison services are classified and prospects and potentials are worked out.*

***Zusammenfassung:** Preisvergleichsdienste werden weltweit von immer mehr Internetnutzern verwendet, um die Preise von verschiedenen (Online-) Anbietern zu vergleichen. International existieren verschiedene Ausprägungen von Preisvergleichsdiensten. Sie unterscheiden sich nicht nur im Bezug auf ihren Leistungsumfang. Auch im Hinblick auf die technische Umsetzung oder die Ausgestaltung der Erlös-konzepte sind Unterschiede festzustellen. Im Zuge dieser Arbeit werden Kriterien zum internationalen Vergleich von Preisvergleichsdiensten herausgearbeitet, die abschließend zur Erstellung von Entwicklungsklassen herangezogen werden. Es stellt sich nach der Überprüfung einer Vielzahl internationaler Preisvergleichsdienste heraus, dass klassische Konzepte zur Beurteilung von Entwicklungsniveaus hier nicht greifen. Ein neues Konzept wird erstellt, welches aktiven Preisvergleichsdiensten zur internationalen Marktanalyse dienen kann. 50 Nationen mit insgesamt über 230 Preisvergleichsdiensten werden auf dieser Basis eingestuft.*

***Keywords:** Price comparison services, comparison shopping, e-commerce, internet economy, information-based and knowledge-based society*

1 INTRODUCTION

“Consumers have always comparison shopped because it is the American way to get a competitive price.” (BizRate.com 2003) Not only in the USA but also households worldwide strive to shop beneficial. Consumers realize that different prices for the same or for similar products exist on the market. However, they don't have exact knowledge on which supplier makes the most reasonable price (Brandtweiner 2001, p. 28). “The uncertainty about the price is positively correlated with the number of suppliers, i. e. more suppliers appear on the internet than on a real competition market. This leads to higher price uncertainty for the consumers on the internet in comparison to real markets. The consumer can never be sure, whether he actually finds the cheapest offer in a particular period of searching time.” (Brandtweiner 2001, p. 28) Price comparison services support consumers by providing desired information professionally and fast about prices and products, if necessary. As a result 11% of the American online shoppers already used price comparison services as an entrance to online shopping in the year 2001 (Stobbe & Heng 2003, p. 6). To this day price comparison services are in the steady process of growth and an end cannot be foreseen. The amount of visitors to the greatest American price comparison services grew between 55 and 81% within a year's time from August 2002 till August 2003 (CBS Marketwatch 2003).

It is interestingly noticeable, in which countries and regions world wide price comparison services are being built or already available. The aim of this essay is to make a broad international comparison of the price comparison services. At first the difficult main task lies in filtering criteria for the international comparison of price comparison services and their markets. With these criteria a far-reaching analysis of the markets and price comparison services is carried out. Relevant and comparable data is hardly provided by enterprises, so the observation of the international market is the main examination method. In connection with this main questions are: which countries stand for which degree of development, which prospects and potentials do they show and which countries lead the development. Furthermore it is to be examined whether it will come to a similar international competition for markets like in other areas of the internet and whether individual suppliers can consequently gain acceptance.

2 PRICE COMPARISON SERVICES

The concept "price comparison service" is used for price comparison services of different quality and expression. At first they can be summarized in the category "switching systems on electronic markets" (Diller 2000, p. 62). A far-reaching definition is: "Price comparison services collect primarily price and product information about homogeneous products of different online shops in the world wide web. They make a general price comparison possible for consumers of usually homogeneous products." (Kuhllins & Merz 2003, p. 1) This comparison shopping primarily serves consumers as an information platform for low-priced purchasing but secondary also for dealers for an analysis of trade rivals (Vargas 2004). Price comparison services which make use of automation by means of informative technological utilities in acquisitioning and displaying prices are in the focus of this study.

Besides the stationary use of the internet (desktop, laptop computers etc.) to recall price comparisons, the mobile use also shall be included in the future-oriented consideration. Great chances and potentials are being awarded to M-commerce for the near future even if current sales only represent a small portion of the e-commerce sales in total till now. So-called Location Based Services are raising hopes in this field (NFO 2003, p. 339). They offer users increased benefits by place-related services. Included in the segment of the price comparison services is the location of the next most favorable offline dealer to the user or in the course of a spontaneous purchase on the spot, guidance in the point of cheapness and product advice.

3 CLASSIFICATION OF PRICE COMPARISON SERVICES

In principle, there is the possibility of measuring individual price comparison services by its basic service: In connection with the speed of the output of a price comparison, the amount of comparable product categories and products as well as the relevance of the search results differences can be measured. But an international comparison implies a far more subtly differentiated procedure.

In the context of the international comparison of price comparison services, at first the definition of a market as a place of concurrence of supply and demand has to be examined with regard to the ranges (Schierenbeck 1999, p. 18). In comparison to the internet, market limits are different than in the offline world. There are therefore technically three possibilities of methodically approaching this task:

1. The internet promotes the globalization of the markets. Price comparison services can be compared internationally.
2. Language areas represent important economic and cultural limits in the international cross-border trade. Price comparison services can be viewed and categorized language area based.
3. Due to nationally different market conditions price comparison services can be geared to single or few countries.

A first examination of the complete world market for price comparison services leads to the fact that globalization hasn't made much progress yet in regard to price comparison services. It cannot be alluded to a single global market. The world market is dominated by a variety of suppliers who are working only in their domestic market. Some multinational suppliers are active on several markets which are often affiliated to a language area. The language area based analysis is at least therefore imaginable for the analysis for some of the suppliers. This, however, wouldn't make any significant and complete international comparison possible. The language area examination of price comparison services in combination with the online dealers is limited to national or regional conditions, e. g. tax, import, customs and consumer aspects. For these conditions often no international regulations exist so that even a language area examination is not adequate at present. At first the rudimentary therefore country oriented approach is the most promising at least for the derivation of criteria for the international comparison.

3.1 Criteria

First criteria can be derived from the range of the market analysis in the context of international marketing for the examination of markets for price comparison services. The analysis of the global enterprise environment and the enterprise specific task environment is included (Krechting 1997, p. 70 et seqq.) ("Market Based view"). Furthermore potentials of price comparison services can also be seen as results of endogenous factors. This enterprise-related consideration is described as a "Resource Based View". In this connection the investigation of strategic competition advantages of the price comparison services is handled. Characteristics for the evaluation of these are usability, restricted dispose and trade ability, limited replaceableness and missing imitableness of its business model (Wirtz 2001, p. 144 et seqq.). In correlation with this, the technological design and consumer-related performance features of price comparison services are to be regarded.

The exact analysis of the market conditions in the individual countries regarding cultural, political, economic, natural and technological environmental conditions is a good starting point for further investigations. In addition besides the extensive market analysis this covers the consumer and supplier behavior as well as the competitor analysis. This wide-ranging price comparison service-related combination of criteria for market consideration can be summarized as an appropriate starting point for a SWOT analysis (strengths, weaknesses, opportunities and threats) for markets and enterprises in connection with the examination of appropriate enterprises (Niehoff & Reitz 2001, p. 41).

Market data	Total population	Buying power (per head)	Online buying power/sales
Infrastructure	Number of Internet hosts	Internet accesses	Rate internet user/online Shopper in the population
Dispatch system	Reliability/speed		
Bank system	Distribution	Online banking	
		Credit cards	
Political and legal bases	Stability/Reliability	Laterals, bilateral, international coverage of e-commerce	
Supplier behavior	Willingness to cooperate	Number of cooperating Online shops	
Consumer behavior	Cultural influences (bargain mentality)	Internet use behavior	Confidence in the internet
Economic environment	Existence of price comparison services	Amount and age	Growth strategies in the market

Table 1: Market appraisal factors for the international comparison

All essential influence factors which have an effect on price comparison services and are justified by conditions on the markets are listed increasing in the degree of the detail from left to right in Table 1.

As an expansion of the comprehensive international comparison of the price comparison services the examination on legal forms, ownership structures, internationalization trends and cooperation behaviors has been made. The revenue sources which price comparison services internationally make use of remain too determined.

Furthermore the price acquisition represents a main challenge. Price comparison services on the internet use different methods of the price acquisition. They distinguish between the use of databases for the generation of price comparisons and the actual price comparison. The live price comparison represents the more demanding variant of the price comparison services in regards to professionalism, since data of various online shops are recalled in best time. Whereas with the database variant price information is already generated in different ways before the user enquires it. It is selected and distributed correspondingly in the context of the enquiry from the database.

Furthermore price comparison services can be distinguished by their technological potentials for the display of price comparison. Some price comparison services offer innovative access possibilities by mobile telephone like e. g. SMS and WAP for the ubiquitous that is place and time-independent price comparisons.

The scope of work concerning price comparison services is one of the main evaluation criteria out of consumer perspective. The scope of work represents the distinction feature par excellence for price comparison services besides the used method for price acquiring. Criteria can be formed by the aspect "performance". Catalog extent, user friendliness and general service are reasonable criteria. Furthermore the service aspect can be subdivided into convenience increasing functions as to price display, purchase-process-supporting publication of product information, confidence-increasing service measures and other services.

Table 2 offers a summary of usable criteria.

Business models	Stand alone-Shopbots	Professionalism		
	Contextual Shopbots			
	Personalized Shopbots			
Business organization forms	Type of company	National/ international Cooperation	Market or business model expansion	
		State of dependence		
Revenue concepts	Direct/indirect revenue generation	Dependence/ independence of transactions	Influencing of Search process/sponsoring	
Technologies	Access possibilities to Price comparisons	Database systems	Display of price comparison	
		Live price comparison		
Range of activities	Catalog size	Number of dealers		
		Number of categories		
		Number of products		
	User-friendliness and Ergonomics		Homogeneous/ heterogeneous Products	Inclusion of product variants
			Graphic design	
			Intuitive serviceability	
			Result displaying speed	
			Sorting function	
	Service		Ability to personalize	
			Price based services	
Product based services				
Confidence based services				
		Other services		

Table 2: Enterprise appraisal factors for the international classification of price comparison services

3.2 Grouping for an international comparison

For the complexity diminution it is meaningful to form country groups. These inevitably represent a simplification of reality and therefore neglect parts of country specific features, however, offer the possibility of globally representing the variety of markets.

It is essential at first to check countries for existence of price comparison services. If the enquiry leads to a positive result, the quality is to be judged on the basis of excellence of the respectively most advanced price comparison services which most likely reflect the standard of a country as well as the highest number of users in the next step. By means of the specific criteria for the analysis of market and price comparison services the country markets can then be summarized and assigned to the following groups due to their market situation and according to the standard of service of the price comparison services (Meffert & Bolz 1994, p. 106).

- Price comparison developing countries (low price comparison standard);
- Price comparison fast-developing nations (middle price comparison standard);
- Countries with high price comparison standard;
- Others.

The dependence of the generic terms on the classification of countries in the development of the world is entirely wanted and intended. A separate section shall be dedicated to countries with an exceptionally distinctive price comparison market so that their particularities are able to be deemed worthy with regard to international development potentials:

- An international price comparison pioneer.

The aim to supplement the primarily quantitative consideration with qualitative points of view is initially to be done.

4 RESULTS OF THE EXAMINATION

4.1 International comparison

The comprehensive international analysis and assessment of price comparison services on the basis of the rendered criteria leads to the following classification of countries. It permits a summary of the stage of development of individual countries at the examination date. The extent of satisfaction of the criteria by the respective formed groups is represented in Table 3.

Price comparison developing countries	China (VR), India, Paraguay, Peru, Philippines
Price comparison fast-developing nations	Argentina, Belgium, Brazil, Finland, Greece, Israel, Mexico, Norway, Portugal, South Africa, Taiwan (Rep. China)
Countries with high price comparison standards	Australia, Denmark, France, Italy, Japan, Canada, Netherlands, Austria, Rep. of Korea, Sweden, Switzerland, Spain
International price comparison pioneers	Germany, Great Britain, USA

Table 3: Summary of the results of the international comparison

4.2 Results

The existence of price comparison services and their realization in the respective countries is influenced by very different factors. The trading conditions are country specific, nevertheless similarities could be agreed on which permit a classification of the price comparison services.

It was shown that the development of price comparison services of a country depend on general basic conditions, whereby the political and legal situations hardly have influence on the development and/or the settlement of price comparison services. Primarily economic and (IT-)infrastructural conditions can be made responsible for the presence of online dealers and in the consequence for price comparison services. The dispersal of internet accesses, banks and transportation systems are part of general infrastructural prerequisites. No price comparison services are, however, residents in some countries despite sufficient base prerequisites. In some countries however no price comparison services reside despite sufficient basic requirements.

		Price comparison developing countries	Price comparison emerging countries*		Countries with high price comparison standard	A price comparison pioneer
			Type 1	Type 2		
Market	Market data	-	O	+	+	++
	Infra-structure	-	O	+	+	++
	Dispatch system	-	O	+	++	++
	Bank system	-	O	+	++	++
	Political and legal bases	-	O	+	+	++
	Supplier behavior	-	O	+	+	++
	Consumer behavior	-	O	+	+	+
	Economic environment	-	O	O	+	++
Enter-prise	Technologies	-	+		+(+)	++
	Business models	-	+		+	+
	Business organization forms	-	O		+	+
	Revenue concepts	-	+		+	+
	Scope of work	-	+		+	+

- Little distinctive or advanced
o average
+ Distinctive/advanced
++ strongly distinctive/advanced

* The markets of the price comparison developing countries are differentiated with respect to type 1 and type 2. Type 1 reflects the typical markets of the fast-developing nations and type 2 represents the markets of more highly developed countries which do not dispose of any highly developed price comparison landscape, however.

Table 4: Groups of price comparison countries

Some country markets are almost served exclusively by internationalized price comparison services. In others almost only domestic market providers are operative, e. g. in Greece and Israel, see Figure 1. In the context of the internationalization of price comparison services the trend can be shown, that price comparison services at first (if not solely) proceed in regions with a close language connection to the domestic market.

Furthermore the large language regions stand respectively for differentiated characteristics of price comparison services. American suppliers stand out as an example of English-speaking price comparison services due to the amount of included online dealers and products as well as due to fine management. Asian suppliers distinguish themselves as developer for innovative access technologies and media. Furthermore the European price comparison services deal with extensive services for the primarily Spanish and German users. This is transferred from Spain into the Latin American area as well as to Austria and to Switzerland by means of close language connections. There is a feedback in an opposite direction. The at first refused analysis of the price comparison services according to language areas therefore offers further insight after completing the individual country examination.

The technological construction of the price comparison services turns out internationally multilayered.



Figure 1: Screenshot of Zap.co.il

The first price comparison services were almost completely live price comparison. A large part of the price comparison services is now a worldwide user of the database method which leads to topicality discrepancies, however, this method is simpler to implement. Only some few price comparison services exclusively make use of live price comparison. Primarily American price comparison services have restricted their service to single categories. With regard to the access technologies Japan is leading in development since mobile internet technologies like e. g. i-mode enjoy great popularity. In comparison to Japan, the American market is still in the early stages of this trend.

The use of intelligent agent systems for the automatic execution of transactions hasn't made much progress worldwide yet. Up to now technological possibilities are not converted into practice as it has been prophesied years ago (Murch & Johnson 2000, p. 163 et seqq.). The complete realization of transactions by software agents with focus on low prices is one example for this.

Price comparison services can be classified internationally by the size of their business model in ascending order: "Stand Alone", "Contextual" and "Personalized Shopbots". Price comparison developing countries are dominated by stand alone and few contextual Shopbots. With increasing degree of development of price comparison services in more highly developed countries, business models shift toward personalized Shopbots. At present personalized Shopbots reveal the highest stage of development. Business models of price comparison services are typically subject to a steady change, like in the e-business. With an increasing possibility of personalization, the large part of price comparison services will develop towards personalized Shopbots within the next years. Possible further stages of development in the future are additional functions in the transaction model including extended software agent functions through price comparison services. At the moment, contextual Shopbots, which may additionally offer privacy-referred information next to price and product information, represent the majority of price comparison services on the international markets.

Most price comparison services worldwide are individual enterprises, fewest are listed corporations. In the context of the internationalization most enterprises grow organically, partly also by acquisitions, take-overs, cooperations and fusions. Enterprise take-overs are seen rather seldom due to the moderate capital equipment of price comparison services, however. The enterprises deal furthermore with the respective markets separately and use synergy effects primarily with regard to the management of the production of price comparisons and its display. The French enterprise Kelkoo.com, see Figure 2,

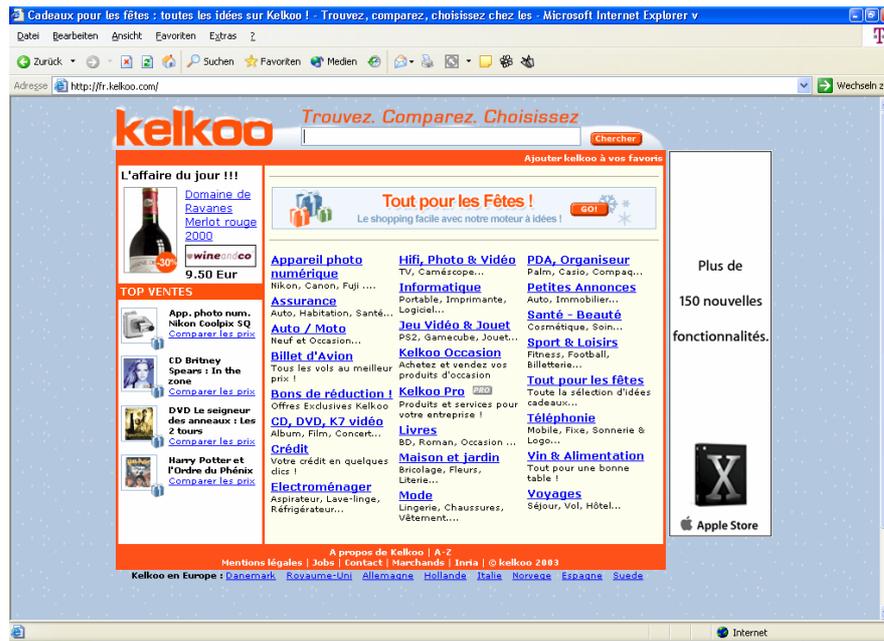


Figure 2: Screenshot of Kelkoo-France

which has reached the top position in Europe by means of an extensive cooperation and canvassing campaign is a good example.

A comprehensive international price comparison service led from a country without foreign branch offices in accessed markets isn't verifiable. First approaches in the context of internationalization in Germany can be seen towards Austria and towards Switzerland and vice versa. However, due to the close connection of the markets, one cannot speak of fundamental internationalization. An extensive internationalization in form of a world wide-ranging price comparison service doesn't exist. Tax and legal reasons which concern the online trade hinder the development in addition to international product characteristics, guarantee, language and cultural differences (Brenner & Lorber 2000, p. 44 et seqq.).

In the context of a worldwide price comparison a further problem is emphasized. The further apart product suppliers and consumers are from each other, the more the skepticism increases regarding the profitability of a favorable purchase due to the increased risk (Brenner & Lorber 2000, p. 27 et seqq.). Despite all aggravating arguments an international price comparison would be able to at least offer clues about prices in different countries so that consumers can provide themselves with worldwide price differences and arbitrage possibilities even if in the end the transaction only takes place between lateral partners.

It is noticeable regarding the generation of revenue that worldwide price comparison services still finance themselves to large portions by advertising, therefore transaction independent revenue. This revenue is split up into revenue from commercialization of advertising spaces and the less common paid placement. Indirect revenue in the context of fees for use isn't common worldwide although the willingness to pay is increasing steadily for high-quality internet contents (NFO 2003, p. 309). The willingness of German internet users to pay for price comparisons is most highly at 12% (NFO 2003, p. 322). The mobile queries of price comparisons are an exception. Payments are already made by the mobile phone users. Great potentials are in this area given the increasing dispersion of mobile access technologies and Location Based Services (NFO 2003, p. 342). A precursor is the Japanese market, e. g. with i-mode (NFO 2003, p. 339). A very common form of revenue is realized by the arrangement of visitor traffic which particularly Brazilian price comparison services publicly point out. Some American price comparison services demonstrably generate revenue from sales of market research data.

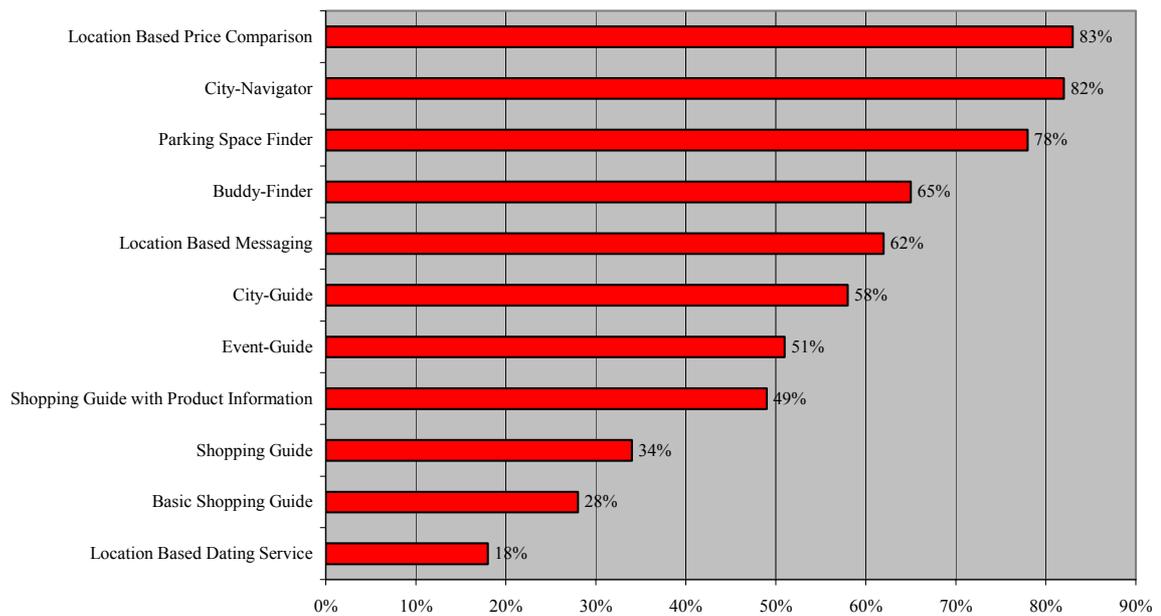


Figure 3: Preferred Location Based Services (Germany) (Kölmel 2003, p. 94)

5 CONCLUSIONS AND OUTLOOK

Revenue through advertisement and commission from forwarding assumedly will continue to be the main sources of revenues for price comparison services. Paid placement which is frequently criticized also will be able to improve its important role particularly if more and more suppliers pass into it. Furthermore it will be assumedly more common to pay fees for the use of certain price comparisons, similar to payment for the recall of magazine articles on the internet given increasing willingness to pay (NFO 2003, p. 323). A far-reaching combination of revenue possibilities for the optimization of the revenue structure is expected. This development will be gradually carried out internationally. Less developed countries will follow the precursor countries or catch up and advance in other domains.

Similar circumstances apply to the scope of work. The price comparison precursor countries internationally stand for specific developments. The American market stands out due to large catalog sizes, for example. The leaders of the development in Europe stand for extensive services. Despite characteristic emphases many price comparison services influence themselves mutually. They send signals via internet to less developed countries and provide a steady development there. This, however, doesn't prevent the development of significant ideas in less developed countries which may gain acceptance in highly developed countries.

The American top position regarding the catalog extent is based on the market size and thus in connection the amount of dealers. Great price comparison services, however, are gradually offering more products for comparison purposes from categories which are new in the repertoire of the suppliers. Categories on this are particularly categories with relatively heterogeneous products. This trend is increasingly spreading worldwide. More and more suppliers of price comparisons integrate areas with not completely homogeneous products.

Due to expanding catalog sizes it is to assume that the opportunities of personalization create an added value for experienced price comparison users. E. g. the exclusion of certain online dealers, manufacturer brands or products with bad results in rating services could be part of it. The automatic search for special offers or sales would increase the relevance of price comparisons for senior citizens

or students for example ("learning consumer preferences"). "Lock in" effects would increasingly be strengthened. Change costs within the range of e-commerce which have been declared inconceivable a few years ago will continue to rise. The simplification and automation of the ordering process by "one-click ordering functions" is also desirable. This type of measures could further increase the internationally advanced user-friendliness and ergonomics.

Only a strong service orientation can promote price comparison services (Smith 2002, p. 16). This confirms the thesis that pure stand alone shopbots without additional services will increasingly lose in meaning internationally and price comparison services will gradually advance to personalized product counselors with price comparison functions. It should be the aim of price comparison services to increasingly evaluate products sold on the internet with regard to their objective quality. Uncertainty concerning quality of products or service represents a worldwide substantial limiting factor for online shopping. Additional confidence-building measures are already offered by some price comparison services. However, these measures and the information resulting from them require absolute reliability. A step to increased reliability of information spread by price comparison services are revealed as measures of brand formation on the part of price comparison services.

Furthermore it remains to be seen in which direction mobile internet access technologies will develop as well as to what extent prospects and potentials concerning price comparison services in regards to additional generation of revenue will be possible internationally. First approaches of mobile use are already recognizable in the more highly developed countries. They still have, however, a limited growth potential regarding present conditions. But with continuous improvement of transmission technologies, transmission band widths, rapidly sinking online costs and improved display techniques of PDAs and smart phones, the analysis of the development of price comparison services with mobile access possibilities is becoming a more and more interesting area.

Another interesting area is the examination of the development behavior of different countries over time. Which importance does the time of the market entry of the first verifiable price comparison service of a country have on the current stage of development? Developments like in South Korea, a country with a very extensive price comparison landscape indicate "Leapfrogging" despite late market entry of the first price comparison service. Similar developments should be expected in parts of Eastern Europe in the near future so that special attention should be put into these countries. The prospects of further international gain in importance of price comparison services are exceptionally good. With an increasing distribution of the internet in all countries and classes of society along with growing confidence to new market places in the internet economy, the need for price comparison services also rises.

The implementation of the vision of a comprehensive, global and successful price comparison service will still take some time, however. At first an international competition for markets probably will determine the events on the more highly developed markets. With the rapid advancement of the price comparison service Kelkoo.com to the new European market leader the competition is already established in Europe. The events in the area of the online booksellers and auctioneers on many markets could also recur internationally for price comparison services. A global market leader defines the market development and in this case it is likewise to emanate that a "winner takes it all" and "looser gets nothing" development will occur (Stähler 2001, p. 243). A market shakeout is already overdue in some markets, e. g. generally in France or in the book price comparisons segment in the USA. With this trend and with increasing globalization of price comparison services the scope of work of price comparison services will continue to converge internationally. The target establishment of online trade standards will additionally promote this trend. Only small language areas or special product groups will be able to remain "price comparison reservations" for small, independent price comparison services.

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