



## The New Marketing Concept for the Management of Services Based on the Knowledge Bases

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**Abstract:** *In this paper, we monitor the impact of the new technological solutions based on the knowledge bases to more efficient and more quality serving in service companies with special emphasis on the service companies in Bosnia and Herzegovina. We present the part of the new technological solutions that can certainly affect the marketing of services and all for the considering of the possibility of introducing a new concept of intelligent serving in service companies. We also present the concept of implementation of knowledge base in marketing services companies and its inclusion in the bussines intelligence system. We introduce new concepts of e-m-i-Serving and e-m-i-Relationships in obtaining service. This concept will allow the focus of service companies on the service user and the service user itself the satisfaction and loyalty to the service company. We want to show that the improvement of relations with service users can be improved with the use of integrated information, more quality service, and with the introduction of replicable procedures and knowledge base.*

**Keywords:** *marketing, knowledge base, electronic and mobile serving, intelligent relationships.*

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### I. INTRODUCTION

Marketing is a modern management concept of permanent adjustment of marketing activities and the whole service system to the changing environment. It is a process by wich managers formulate and implement strategies in order to achieve set goals in the given conditions of surrounding and the service system itself. Under marketing we imply a continuous process of customizing any service system to the a variable environment which performs a constant environment impact on the system but the service system also performs a certain impact on the environment in which it exists and which it adjusts. According to the American Marketing Association "Marketing is an organizational function and a set of processes for creating, communicating and delivering value to customers and for managing relationships with customers in ways that benefit organization and its stakeholders[1]". Here we are dealing with the improvement of communication and the delivery of value for the service users with the use of electronic and mobile communication (e-m-Communication) and the knowledge base.

Marketing is a planned and comprehensive concept facing the surroundings, which relies on creative and innovative approach in the development and planning of marketing activities, marketing infrastructure, products and services and marketing control. It is the process of analyzing factors relating to the surroundings, competitions and service, which affects the bussines units and the prediction of future trends in service areas, which are of interest for service system.

There is no universally accepted marketing definition. The definitions were given to suit the purpose for which they were used, and they were subject to change if the boundaries of disipline changed. In the first place, the definition depends of the approach and the viewpoint from which the marketing is observed. Approaches have changed over time, so that the new ones haven't fully questioned the old ones. Most of the authors who have dealth with the study of marketing have sought in his work to bring to a greater or lesser extent certain elements that would thus come to the modernization or updating of the earlier given definitions.

Marketing is the management process that identifies, anticipates and meets the requirements of the consumers thereby making profit [2]. Marketing is all that is between idea and the profit.

Kotler defines marketing as: "the social process by which individuals and groups obtain what they need and want through creating and exchanging products and value with others [3]".

Changes that occur have influenced that the concept of marketing is increasingly "expanding" and "deeping". The changes go so far that the definition of marketing has suffered certain changes from being marketing as a bussines function that aims to meet better the need, desire and demand of customers/consumers to that the marketing is a process of ensuring the optimal level of satisfaction of consumers with the achievement of optimal profit for the service system and the optimal financial and work satisfaction for all the employees in the service systems [4].

Marketing concept puts the emphasis primarily on the service user and then the service system.

The key features of the modern marketing concept are the following: Marketing is an idea – conception. Marketing can be seen as: business management and leadership philosophy, function, conception, system, economic or social process. The complexity of the concept of marketing and the scope of his work requires a good knowledge of theoretical knowledge and practical experiences and teamwork [5].

Stanton [6] believes that in the future the following problems will have a significant impact on the direction of development of marketing:

- Problem of social responsibility of the company will increasingly strengthen,
- Increased consumption will have more impact,
- Increase of the importance of environmental protection and legal regulation of this matter,
- Problem of the limitation of available resources will increasingly become more severe,
- Technological development in the future will not be able to resolve the accumulated problems faced by the company and the society as a whole,
- State intervention will have more impact, especially in the protection of the environment, and
- Prices will continue with the slight growth, and the economic growth will be slow.

Kotler proposes the concept of “enlightened“ marketing, and its principles are: orientation on the customer/consumer, innovation – constantly offers better ways for solving consumers' problems, value – takes care of creating value for the consumer and greater recognition of consumer's desires. According to Kotler marketing management involves: analysis, planning, implementation and the control of programs intended to create, build and maintain beneficial exchanges and relationships in target markets to achieve the goals of the organization [7].

The aim of marketing is to meet the needs of consumers, in our observation of a satisfied user of the service. On the market where it is present a very sharp and strong competition, which means that it will successfully operate only those service providers who will understand the best the needs of citizens – future service users. According to the adopted marketing approach, with the orientation on the last user or consumer, with the offer and the service is started where the citizens – potential buyers are and not where the bidder is headquartered.

In the service marketing we must know the strategies and methods of marketing activities and adapt them to the specific conditions in which the relationships among market subjects are formed, especially due to the particular delivery of certain services.

According to Philip Kotler marketing deals with the identifying and meeting individual and social needs. To effectively meet all of these needs it can be exploited the new technological solutions based on knowledge bases and intelligent service activities (i-Service). In this paper, in one part we deal with the ways on how to realize all of these needs.

## **II. THE PROCESS OF MARKETING MANAGEMENT**

Marketing concept seeks and demands integration, synchronization and the coordination of activities relating to the provision of services. All the marketing activities should contribute to the efficiency of serving, or meet the needs of the service user. In the essence of marketing lies a timely ability to adapt to changes and market requirements, so marketing is considered one of the instruments suitable for the implementation of necessary structural changes.

Marketing management is the process of initiating and directing marketing activities in order to meet the needs of citizens as consumers, the economy and society in products and services with the realization of profit [8].

Marketing activities management is a continuous process which includes: planning ( in which management decisions are made about the objectives, policies, strategies, plans and programs of marketing activities), organization ( organizational structure and the organization of direct marketing activities), control ( measuring the achievement of planning decisions ( objectives, policies, strategies, programs, plans)).

The service is an activity or a benefit that one party can offer to another. Usually it's intangible and does not result in the ownership of anything. Its production may or may not be associated with intangible, physical product. The service includes economic activities which result in intangible form that is spent at the place where it is produced and provides benefit (satisfaction) to the person who buys it.

Service can not be seen, touched, tried out, it can not be bought and taken home, so it is difficult to offer, but the offer of service is difficult to understand. In this paper we look to the service in general form and they may relate to the services given by the public administration, tourism services, telecommunication services, bank services, transport services, postal services and the like.

According to Kotler employees in marketing deal with placements within ten different areas: goods, services, experiences, events, personalities, places, properties, organization, information and ideas. In this paper we follow a somewhat more detailed only some segments of placement such as services, information, experiences, events, places and ideas. We do not believe that the other placements are not important, but because of the nature and the length of work we have not observe it in detail.

After the use of service we can talk about the characteristics of experience: experience, satisfaction, trust, attention given and the like. Experiences and expectations are subjective. The users pay special attention on the visible and tangible elements that participate in the process of providing services. These are the space, appearance and the behaviour of the employees, equipment used in the provision of service, supplies to be delivered to the user, company name, logo, and the like. Based on all of this it occurs and forms the perception of the user about the nature and quality of service. Marketing, this feature of the service presents a major problem because of the difficulty of market research for certain types of services, forming the price of service, lack of patent protection, etc.

If a company wants a success in the market of services it needs to know who is the user of its services, which are his expectations, needs, and desires and how he will behave when using the service. Choosing between a large number of

bids, the user passes through relatively unknown decision-making process. Decision-making in the service sector is significantly different from the process which a consumer passes when deciding on the purchase of tangible products. The main differences are: greater significance have the information collected from persons who have experience with services than from other sources, the cost of services and the appearance of the physical surroundings (the surrounding in which the service is provided) are usually the main determinators of service quality, for a large number of so-called non-professional services is often an alternative self-satisfaction of needs and the process of collecting information about the service and the assessments of service after using last much longer than the purchase of the product.

Consequently, the successful marketing of the services implies a well designed access to the user for which is necessary professionally trained and educated staff. The interaction between the one who provides the service and the one who uses it can be a deciding factor that affects the determinable future behaviour of users.

The quality of the service is the most important component of the service regardless of whether we look at short-term or long-term performance of the company. Quality of the service is very important to only its positioning. Programmatic, service quality must include the meeting of certain standards (although the services are very difficult to standardize). In addition, the quality of service and the customer's satisfaction determine the number of repetitions of the use of certain services with the same service companies.

The importance of quality as a competitive advantage and characteristic by which the service company differentiate and distance itself from the competition is increasing. Quality will:

- Interest the user,
- Enable the sale of service,
- Affect the achievement of customer satisfaction with the service provided
- Build and maintain customers loyalty.

The company whose service fulfills these tasks the user will perceive as reliable, which provides quality service. The quality service is very difficult to copy or imitate. The quality service is the one in the center of which are constantly found expectations, desires and needs of users.

### III. MARKETING KNOWLEDGE BASE

In order to effectively manage the marketing services it is necessary for us to quickly come to the necessary knowledge. Therefore, in this paper we propose conducting a knowledge base in a digital form. Knowledge base contains knowledge which is presented in the form of unstructured set of facts and rules.

Now we have a large number of languages and tools for describing ontologies. Among ontological languages mostly is used OWL (Web Ontology Language) and editing tool ontology "Protégé-OWL". OWL is a development environment presented by the World Wide Web Consortium (W3C). To view knowledge we used Protégé-OWL editor because it is recommended by the consortium that works on the semantic web, led by Tim Berners Lee.

In order for the reader to be more easier to monitor the content of the knowledge base and the use of appropriate tools in some parts of the text, we leave a piece of the text written in Bosnian language.

Knowledge base should include knowledge about: Aspects that determine the quality of the service (Aspekti koji određuju kvalitet usluge), Criteria for assessing the quality of the service (Kriterijumi za procjenu kvaliteta usluge), Characteristics and demand factors (Karakteristike i faktore potražnje), Criteria for segmentation (Kriterijumi za segmentaciju), How to make customers loyal (Kako korisnike učiniti lojalnim), Recommendation for more efficient work and the like. (Figure 1). "Necessary knowledge" (Preporuke za efikasniji rad i slično).

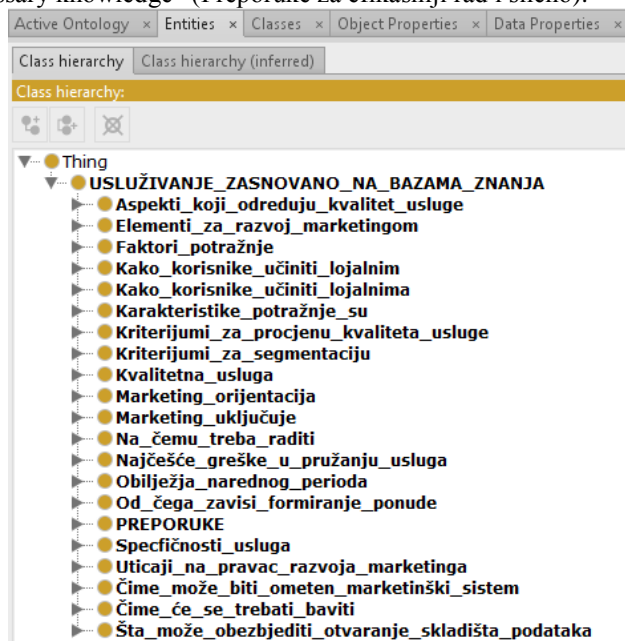


Figure 1. Necessary knowledge

Onto graph (Figure 2,) were presented knowledge necessary to provide quality services, ( neophodna znanja za davanje kvalitetnih usluga). Some of these skills are: service should be unconditional ( must not contain conditions), focused on the customer needs, with clear and objective standards, it is understandable and simple, measurable, persuasive, that it effects on satisfaction and the like.

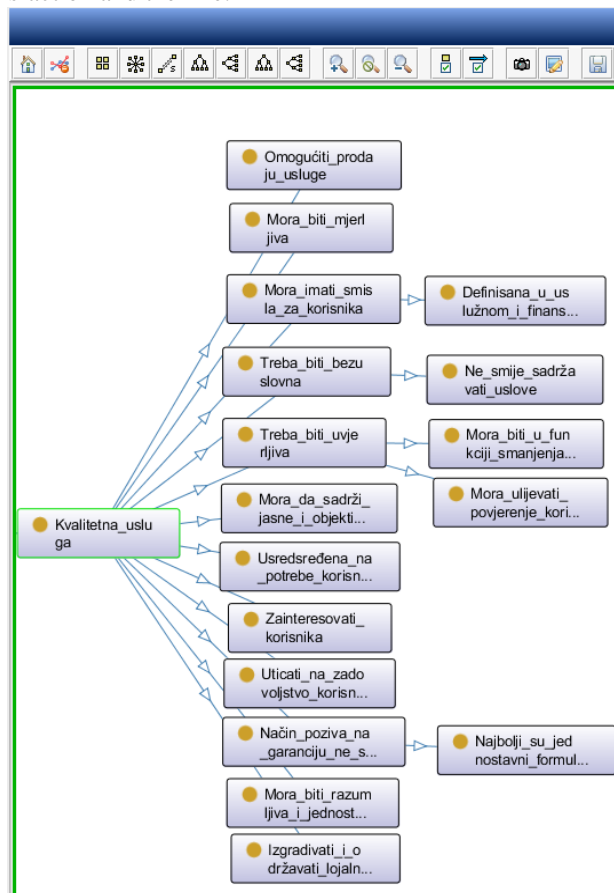


Figure 2. Necessary knowledge for providing quality services

The most common errors in providing services and on which depends the formation of offer of the service is presented in Figure 3. The most common errors in providing services, (Najčešće greške u pružanju usluga), and the part of them we entered in the knowledge base, which are: inadequate time spent waiting for service provision, inappropriate behaviour of service providers, lack of coordination between the responsible persons, certain omissions in the providing of services and the like.

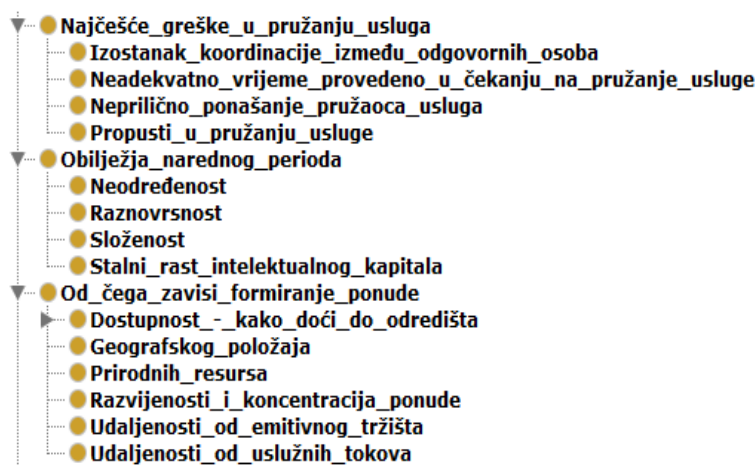


Figure 3. The most common errors in providing services

In the knowledge base are specially highlighted “ THE RECOMMENDATION“ (Figure 4) which should comply with the marketing department if it wants to have the highest quality service and loyal customers. Some of the recommendations are: to bear in mind that the market is the only measure of success, the quality of service depends on the one who provides it and on the way it is provided, to invest more in the people, to have a web site, regular maintenance of the web site, to track and measure the results of use of the website, to have a database and the knowledge base of customers, to track the customers needs, to measure the effects, constantly innovate and the like.

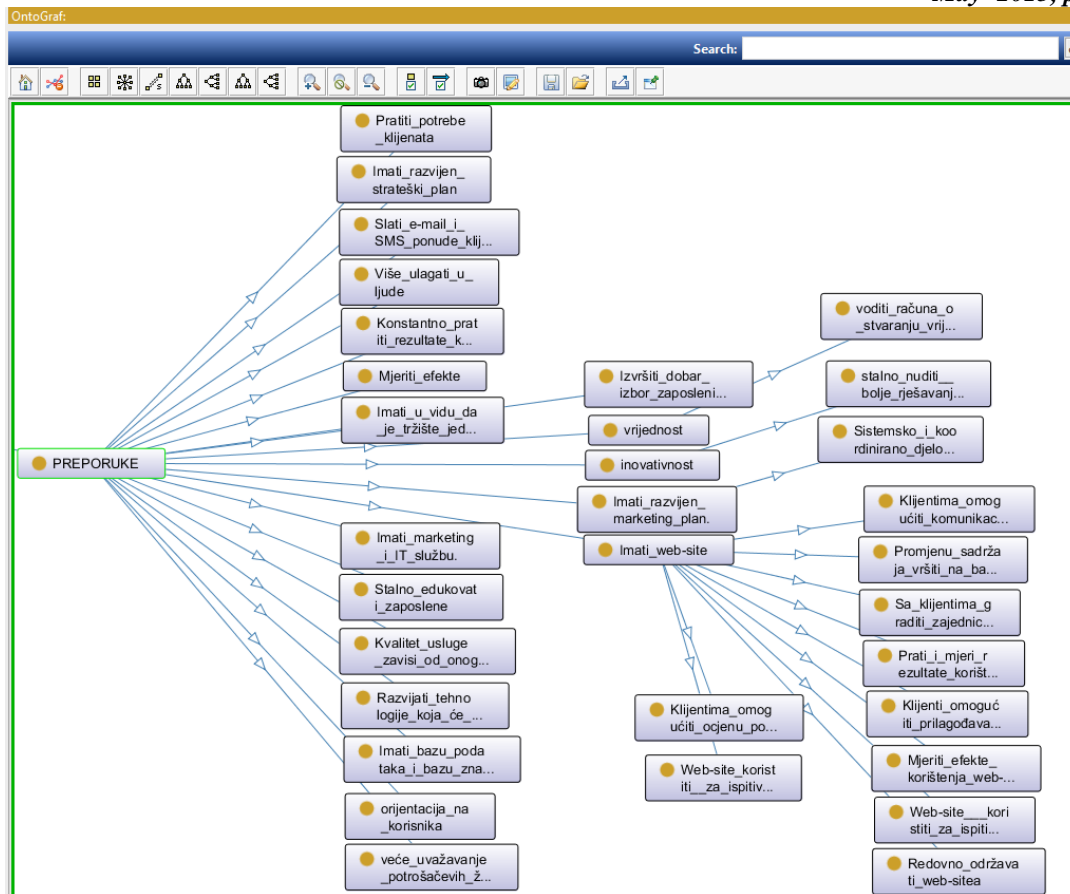


Figure 4. The recommendation

#### IV. SERVING BASED ON THE BUSINESS INTELLIGENCE

Digital information and their very rapid flow change how the service companies work and the Internet technology is changing the boundaries of serving. In order for a service companies to operate with competitiveness, they must ensure that all employees and service users have instant access to all the data, information and knowledge. It must ensure the exchange of information, knowledge and idea that can be incorporated into a well designed and coordinated result.

His latest book called *Living in the Fault Line* by Geoffrey Moore, strategic guru of the Silicon valley and the author of the book *Crossing the Chasm* and *Inside the Tornado* begins with the statement that the information about the property is now worth more than the property: “In this new world the information governs. The more information you have and your analysis is better (and faster) the greater is the probability that you will be more competitive and make better investments.”

Employees are now using new technologies so they could be able to assess different theories about what is happening in the service market. The one that the new technologies can provide is the new deeper analysis of the information which enables the employees to convert the passive data and information into the active knowledge and intelligence.

In order to fully understand the new trend, to perceive the opportunities of e-m-Business intelligence, to be able to see how to be and stay competitive service companies must address to the new technological solutions which provides them with it. They can generate the highest profits and be the most competitive if the data, information and knowledge which they have intelligently distribute to their employees. Here does not end their profit. They can realize even greater profits if they share it with the external environment (their clients, suppliers, service users).

More and more the companies are starting to realize that the information is the currency of the new business. It is increasingly beginning to notice that the leaders of e-m-Business are transforming the raw data into intelligence. Large amount of stored data is now integrated and analysed to have an insight into the key business matrix. As never before, the data is researched, anatomized, judged and analysed to evaluate trends and irregularities.

By introducing knowledge base and systems of e-m-Business intelligence, the service companies provide all users so they can find for themselves the answers to their business and service questions by inventing their own searches and reports. What kind of impact it can have on their competitiveness?

The service company can use the knowledge bases and the system of e-Business intelligence to introduce into its activities the methods of determining savings in servicing with which could be identified hidden costs and missed opportunities and thus encouraging the realization of new types of income. Research and experience show that all types of business rely on a lot of assumptions and the rules of practice. Finding the competitive advantage demands reviewing because sometimes the detailed analysis shows that such practices are not good. [9].

Successful e-m-i- Service companies use the system of e-m-Business intelligence so they could separate their services with their newly created value from the ones that offer their competitors.

Now service companies must seek answers to the questions: How much intelligent is our service? How well knowledge workers (all employees) know and understand the forces that drive the profit and determine the future? How to be and stay competitive? How to acquire knowledge and to understand it? Why learn, explore and gain experience? How to use the acquired knowledge for the achievement of improvements? And most importantly, how to attain that knowledge and intelligence in the Internet business? Today's serving turns upside down the traditional service customs, it is moving fast so we rather measure it by days and hours than by months and years.

Why service companies have to be intelligent? Intelligent company is the one that quickly delivers quality decisions, outwits its competitors, can be brilliant and satisfy the natural instinct of winning. The intelligent system is more often an assumption not just for victory and competitiveness but primarily to participate in the competition.

By opening their data warehouses and their knowledge base to its employees, clients and business partners it can be: achieved competitive advantage distinguishing itself from the competition, provide clients a cheaper serving, to reduce the number of calls of clients who need help, to improve the satisfaction off all, to build loyalty and to retain customers, to reduce costs of preparation of printed and digital reports and its distribution to clients, encourage a new inflow of revenue, take a place of a technological leader focused on the future [10].

During the implementation of e-m-Business intelligence it needs to balance the desire for fast setting, appropriate software tools and adequate infrastructure so that it lasts. You must resist the temptation that tactics does not assume the strategy.

## V. INTELLIGENT E-M-SERVICE

e-m-Serving, which is done on computer and mobile networks is faced with numerous problems and challenges. Clients are faceless, impatient and they want to get the services with a single click of the mouse or by pressing the icon of the mobile device. e-m-i-Service company collects large amounts of data, information and knowledge on the demographic characteristics of the client, expressed preferences, previous service and the observed behaviour. By intelligent use of these information they can shape the difference that separates those satisfied from the dissatisfied.

The intelligence of e-m-Service brings great value, but it should be gradually implemented: by analyzing data on primary serving and transactions, by implementing the technology of personalization and the segmentation technique, by using information which are left behind in their daily records by the visitors of the sites and from data of the third parties [11].

By using the above process, e-m-i-Service company can master the understanding of its service base and adjust its service to meeting the needs of the most demanding client ( how he wants to get the service: by SMS, by Internet, by mail, by coming to the counter, by telephone,...).

Clients of the services, service partners and citizens who visit the websites daily generate a large amount of data. It keeps track of all transactions, every click of the mouse or a keystroke, each loaded image and each read display. What was citizen watching before he asked for the service? From which website did he arrive? Where did this individual go after visiting the company's portal? Which path did he take on the site before he asked for a favour? The total result can be incredibly great and equally useful.

e-m-i-Service providers are beginning to realize that with the use of the intelligence in the work with data can clear a way to provide pleasure and thrill of the client. The results to which they can come by analyzing data and with the use of knowledge base they can later use to strengthen the personalization and for the promotion of intelligent activity. By browsing the traces that leave the visitors of websites, they are looking for the solutions for improving the design of their website and their attractiveness, making their websites even more attractive and "active" enough in order to provide all the users necessary knowledge for e-m-Serving.

The risks for e-m-Service are very high. Doing business on the networks is extremely demanding task because customer's behavior in the virtual space is a lot different from the real one.

## VI. CONCLUSION

In this paper, we have dealt with a new marketing concept in service systems based on the knowledge bases and e-m-Service intelligence and their impact on the indicators of success in the work of service systems. Service systems can timely respond to market changes and to make a more quality decisions only if they have adequate information and knowledge which can provide knowledge bases and a implemented marketing concept of business intelligence for providing more quality services.

Knowledge base and service intelligence among others, can provide: a better understanding of the data, information and the complete business, better communication, both within the service system and outside of it, a revelation of hidden costs in business, missed opportunities and achieve new incomes, recognition of profitable service users, a promptly reaction on market changes, the ensurance of the realization of the planned market strategy and set goals, the reduction of the amount of information and that they are of better quality, the making of the service processes more efficient, more intelligent and to ensure predictability in serving, to provide personalized service and self-service.

From all the above it can be seen that with the implementation of the knowledge bases and the concept of service intelligence it can be provided a better competitiveness of service system.

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