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JUSTIFIABILITY OF EXECUTION OF SERBIAN TELESERVICE IN INDUSTRY

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Abstract: *In many areas of business services has a major impact on the decision for any manufacturer to decide, often even higher than the price or features. So, the classical servicers meet the above requirements only partially. To meet the above mentioned requirements is necessary to develop new concepts and methods, and one of them is the teleservice. This paper presents a teleservice as the process of removing electronic failures on machines from a distant place. Service is explained in details as new service, who gives a new concept of maintaining the production. Also included are all the positive and negative features of this service. The aim of the study was to analyze the reasonableness of performing Teleservice compared with the conventional way of service. The paper will be justification of service execution teleservice show an example of a machine for filling water.*
Keywords: *Teleservice, service, machine, the maintenance, failure*

INTRODUCTION

The teleservice means remote service that is process of technical services through telecommunications networks to remote location. This service includes remote access to the machine by an authorized company. Remote maintenance will provide servicer that he can from his work place directly on machines performs certain procedures. Each press of the keyboard and the mouse movement is directly transferred to a PC of person who ordered service. Servicer that can see the state of the PLC on that workstation. The main focus here is placed on proactive service, remote service and multimedia communication. The most important industries to support e-service are now in the process industry and medicine.

On the market today there are over 200 companies in e-services with different approaches and different technological parameters [1].

All bigger international competitions machine manufacturers forces the same to provide their customers with very good quality service network and not just big machinery manufacturers, but also even the little ones. Very important business activity of machine manufacturer after their sell are also after-sell services. This is primarily related to the repair and especially on maintenance. Customers today, from the manufacturer, not only expect a very high quality product, but a very high quality and efficient service.

In many areas of business services has a major impact on the decision for any manufacturer to decide, often even higher than the price or features. So, the classical servicers meet the above requirements only partially. To meet the above mentioned requirements is necessary to develop new concepts and methods, and one of them is the teleservice [2].

Competition has become very intense increase in the globalization of markets. Companies are forced to adopt new strategies in order to ensure their competitiveness. In the classical concept of service a large part of the supporting service was provided locally, in the sales, local cooperation or service personnel acting in the world. This concept requires huge financial, organizational and legal risk. Therefore, there must be developed alternative methods of service. The constant growth of is innovative machine manufacturers who are already using new information and communication technologies effectively in servicing the machines. These IT (information technology) services operate at a great distance and can be considered as teleservice [3].

The early 20th Century was the beginning of the development process teleservice on technical systems. The process is a technical point of view developed over time so that today are based on peer-to-peer connection via modem. Teleservice is characterized by a reactive service strategy. Remote services, which means the use of the service process across networks, especially the Internet has expanded the potential scope of services teleservice and strengthen it. Due to the increasing integration of production machines in the environment, teleservice centers are also increasingly necessity for the successful operation of any equipment. Teleservice significance and its potential variety in terms of global competition is undoubtedly an extremely large. Manufacturers as users can take advantage of a number of benefits that provide access to information and communication technology support. To fully exploit these advantages in practice, it is necessary to fulfill these demands acceptance by users, organizational integration, and technical aspects. If this meet teleservice provides adequate rational potential. In addition, the increasing development

of information and communication technologies will result in the realization, in today's conditions visionary concept and the constant increase in the spread of teleservice. Companies that intend to remain competitive today on international market will have to use a teleservice [4].

JUSTIFICATION OF TELESERVICE

Teleservice can still be defined as a method for data exchange based on remote access to the venue or technical equipment (machines, production lines, computers, etc.) to detect fault diagnosis, maintenance, data analysis and optimization. The connection between the user and the system can be established using the following communication media: analogue telephone network, ISDN, cellular networks and the Internet [5].

The complexity of modern machines and equipment that are used in industrial production requires new methods for easier troubleshooting. Troubleshooting and repairs in a classical way service machines require high costs and adds the following problems [6]:

- *Journey from servicer to user. During that time machine does not work causing great financial loss. Often technicians on-site find even trivial defect;*
- *Some errors can occasionally appear and disappear. In most cases, the customer just looked at this problem, and still operate. When the repairman arrives to the machine, all traces are gone. So it often happens that no one can find the cause of the failure;*
- *Servicers must bring with them a lot of funds for the work, equipment for measuring and tools. Often it can happen to forget the important special tool, then you have to wait until tool gets there;*
- *Service and transport costs a lot.*

As the basic requirements for the introduction of services Teleservice stand out [1, 7]:

- *limiting local manpower or reduce to a minimum,*
- *risk reduction in hazardous working environments, e.g. in explosive environments,*
- *entral expertise (locally solve small problems a remote, centralized complex problems by service personnel),*
- *efficiency and faster response from servicer and improving procedures for preventive maintenance due to constant monitoring of performance machines.*

In order to teleservice possibly work there need to be fulfilled the following conditions [1]:

- *Geographical distance: Service should be provided with spatial distance. This means that the service must provide a service technician who is far away from the user;*
- *The use of information technology - use of information and communication technologies is essential in performing services (i.e. Using ISDN or modem for the transfer of process or control data);*
- *Industrial service - Derivative services should be in the field of industrial services, for example, maintenance, diagnostics and repairs.*

Benefits of a teleservice bring the user the equipment and the equipment manufacturer are shown in Table 1.

Table 1. Advantages of the use Teleservice for users of equipment and equipment manufacturers

Equipment user	*Manufacturer of equipment*
Long-term reduction of labor costs *Reduction of cancellation* *Minimum cost service out of warranty* *Support during commissioning* *Increase competence within the company to resolve problems* *Increase employee satisfaction by expanding the knowledge base and expanding the scope of implementation of tasks* *Internal staff training*	*Reducing costs (labor and transport)* *Increased availability of experts within their own company* *Optimizing structure of service* *Improving the efficiency of service* *Intensified the obligations of user* *Economic presence in remote regions* *Increase performance service* *Reducing the response time*

MATERIALS AND METHODS

The paper will be the justification of service Teleservice in Serbia show on one machine for filling bottled water in water factory Water Villa Ltd Novi Sad. The above machine is used for filling Fruskogorska spring water in plastic bottles from 0.5 to 2.5 liters. To demonstrate the justification of performing services Teleservice it will be compared the conventional way of service on the example of a failure on the same machine. For the analysis of justification types of services will be analyzed following costs:

- *costs of a halt in the service,*
- *travel expenses and*
- *the cost of diagnosis and resolve a failure.*

RESULTS AND DISCUSSION

Machine to a standstill using the services Teleservice spent one hour, instead of the most minimal of six hours using the conventional way of service. Time turned into money needed for travel service in the classical way of service on the route to 150 km of that was 150 €. Total cost of the services Teleservice to fix the fault on the machine for filling water would amount to € 900, while the application of the conventional type of service the total cost of repair services amounted to € 2100, table 2.

Table 2. Comparison of the cost of services Teleservice with traditional service on the machine for filling water

Cost of services, which are compared	*Teleservice*	*The classical way of service*
Cost of service downtime in the process of servicing	*1h x 300=300 €*	*6h x 300=1.800 €*
Travel expenses (arrival and departure)	*-*	*1€ x 150 km =150 €*
Cost of diagnosis and the solving of a cancellation	*600 €*	*150 €*
Total costs =	*900 €*	*2.100 €*

Demonstrated on the example of two methods of maintenance is possible by applying a Teleservice reduce costs by up to 2.33 times. Online support, shown by the example of removing clients save time and money, reduces machine downtime period and reduces the number of personnel engaged.

The above shows online support on technical systems saves time and money, as do 90% of all electronic faults in machines and plants can be eliminated by using a Teleservice. Using a network connection and computer sharing, can monitor the status on your computer or on that workstation. Online support includes electronic services in the form of: system configuration, consulting services regarding support, support questions, upload and download data management it. Through online support can be a software update, if there is a need for it. Online teleservice training also saves valuable time when it comes to training courses. It is not rare that an online support can provide training for new software programs or special requests that they provide.

For example free access to the remote service can be based on the use of prepaid telecommunications services. With the consent of the Employer Services Teleservice, for example may be granted a loan of five hours. During the process of Teleservice, may at any time check how much credit or time remaining. So, the customer service always knows what his current loan and, if necessary, it can always supplement. When concluding the first contract for remote maintenance is usually more well-known companies give 5 to 10 credit hours for free.

CONCLUSION

Users of Teleservice need to realize the benefit of cost reduction-Reduction of failure, greater flexibility and productivity services. Teleservice Service providers on the other hand should look for their advantage to improve efficiency, customer loyalty and commitment to a better job. All of these justifies teleservice as a very current topic that is brought into context with the reliability of technical systems and defines it as an issue which is yet to speak, and an area that is yet to develop in the years to come.

Demonstrated on the example of service to the Teleservice filling machine bottled water maintainers funds for work in production could reduce their costs by up to 2,33 times compared to traditional ways of service.

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