English version of "Kundenzufriedenheit oder Verschwendung," JapanMarkt, Feb. 2013 edition of the magazine of the German Chamber of Commerce and Industry in Japan

"...is like an airplane, which takes off with some seats empty – the money is lost forever."

Customer Satisfaction or Waste

Customers often complain about long wait limes on the phone, long wait times for engineers, and the delivery of the wrong spare parts. Field service engineers complain about too many hours of overtime. Sales complains about lost projects or being forced to reduce prices due to customer complaints about service performance. Headquarter back home complains about costs being too high.

What country manager or services manager has not received such grievances?

by Reinhold Stapf

Service induced customer satisfaction is continuously indicated by managing directors of foreign subsidiaries in Japan only as the "important" or "very important" key decision factor for selling more machines or systems.

Real customer satisfaction can not be created by doing a lot of free-of-charge service to customers; however it is very often done to compensate for service performance short comings. This free-of-charge services losses go directly into the bottom line of the service operation and thus into the bottom line of the company. Also sending quickly someone on-site who is not a trained technician with the right spare parts does not create customer satisfaction but are merely simple and poor attempts to pacify a customer.

Real customer satisfaction can be generated by regularly and structure investigation on customer requirements and matching them. For doing so, it is important for the service provider to be able to control the "time-to-solution", thus generation of customer satisfaction is a matter of a high effective and efficient service process.

Control of "time-to-solution"
When the control of time-to-solution needs be enhanced, the time an engineer is available for work at customers' sites needs to be increased. This is the only way to achieve this.

Investigations reveal that the daily work of an engineer needs to do is filled with many activities between two customer visits. (Fig. 1) However, a service engineer, who does anything else than delivering the service for which he/she is trained, is like an airplane, which takes off with some seats empty. The money for these empty seats is lost forever, so is the time of an engineer when he/she does something else then delivering services. Therefore it is the companies' responsibility to organize and arrange work in a way that the time loss between two customer visits is reduced to the minimum possible. (Fig. 2)

An engineer's time between two customer visits can only be shortened if all the other work is done in a parallel process by other staff. (Fig. 3) The solution to this is an enhancement and optimization of the business process for the service operation. This means first a reduction of all work done by anybody to the minimum possible. Next, all needed activities must be done by the most suitable staff and the engineer's work must be limited to work which can only be done by him due to his technical expertise. IT system support has to be optimized. Finally, all activities must be must be arranged in the most effective and efficient way.

Modeling of the Workflow
The solution to this is a workflow or business process enhancement. It is not only easy to be said, but also easy to be done if the right method or technique is applied and sufficient experience is available. IDEF0 (Integrated DEFinition 0 – see text box) is the best method for this task.

Based on the IDEF0 model describing the actual workflow, the process must be consequently enhanced. All activities are to be challenged for needs, who is doing them and how, which tools and/or IT support can be used. Also new ways of doing needed activities are to be searched for. The modeling technique allows developing alternatives for comparisons and decisions.

IDEF0 – A Real Workflow Modeling Technique

Most always flowcharts with or without "swim lanes" are used to graphically describe processes. Although flowcharts were 1921 first published to describe processes, they are mainly used for development of computer programs and the search for better methods went on.

On the search for a better method the Structured Analysis Design Technique (SADT) was developed by Douglas T. Ross at the famous

Massachusetts Institute of Technology in the late 1960s. Field tests started in the early 1970s. The US Army took this technique as a starting point to develop and entire family of modeling methods based on this SADT and its underlying fundamental ideas. One of the member of this family is for description of functional processes: Integrated DEfinition for Function Model 0 (IDEF0). Publication was made only at the end 1993 by the National Institute of Standards and Technology, USA in the Federal Information Processing Standards Publication 183.

A very illustrative description of IDEF0 was made by C. G. Feldmann in his book "The Practical Guide to Business Process Reengineering Using IDEF0" (Dorset House Publishing, 1998): "The theoretical basis of IDEF0 is that it can be used to model any system comprised of things and happenings". This means IDEF0 is the method or technique to describe human interactions and how their work is supported by tools and IT systems. The method combines graphical languages elements with natural language elements, thus making understanding very easy. Due to its feature of decomposition, breaking down complexer activities into easier to understand ones, IDEF0 also allows description of small details where needed or staying on higher abstraction level when this is sufficient. Therefore IDEF0 is the ideal tool for business process enhancements in service and in general.

Due to the possibility to look at the process at various levels of details, the IDEF0 modeling technique also allows easy definition of process related KPIs (key performance indicators). Such process related KPIs are to be defined, monitored and reported on a monthly base for three purposes. First to monitor the process performance, second to correlate the results with the on-going customer satisfaction survey results, and third to take corrective actions.

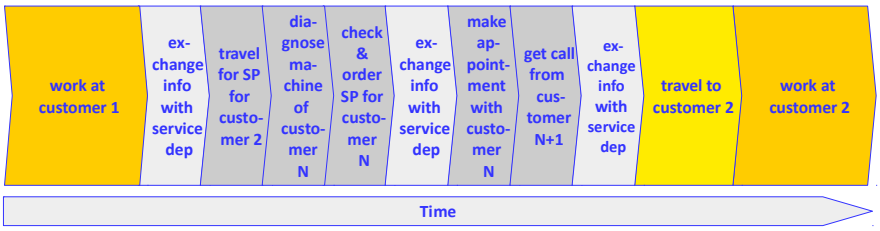

Fig. 1: Typical workflow of a field service engineer with many activities between 2 customer visits

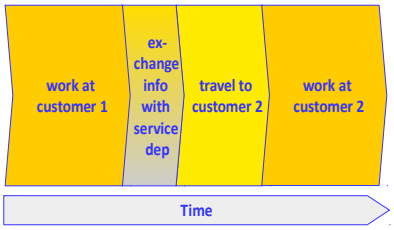

Fig. 2: Workload of a field service engineer is reduced to the minimum possible

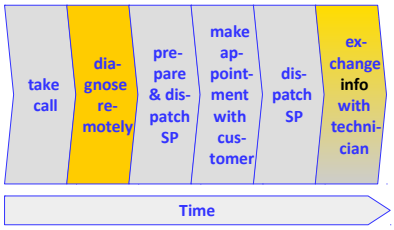

Fig. 3: If this work is done in parallel the field service engineer can go faster to the next customer

Fig 4 shows an example of an application of the IDEF0 method to a repair center process of a company in Japan running both, a field service process and a deport repair process. (For time reasons the field service process is not yet optimized, thus results cannot be shown here.) Due the different service requirements for different products both processes are needed parallel to each other. The values (time and cost) used in the charts are always for one process cycle.

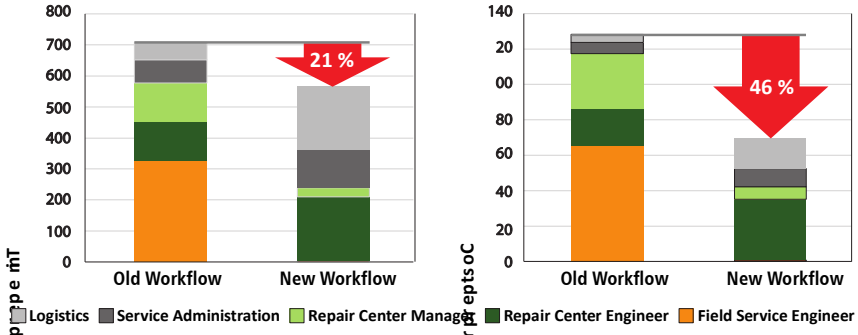

Fig. 4: More time available, less cost: achieved by process modeling
Values along the y-axis are always for one process cycle.
The left part shows the time domain and the right part the cost domain.

Left side chart shows the "time view" whereas the right side chart shows the "cost view".

In terms of time, the overall shortening of the process is 21 %. The reallocation of activities to most suitable staff reduced workload from expansive field engineers and the repair depot manager to repair depot engineers, administrative staff and logistic staff. As a result, for 1 process cycle the workload for a field engineer was reduced from about 320 min – which is more than ½ a working day!) - to less than 5 min. The time made available for field engineers is now used for field work creating customer satisfaction and additional revenues.

Looking at the right side chart it is to be seen that enhancement of the workflow reduced the cost for one process cycle by 46 %.

In summary, the repair depot can do 20% more work with the same staff, costs are reduced by 46%. Additionally field work time of ¾ of a working day was made available to better control "time-to-solution and created a proven revenue increase of 10% in only 8 month. Increase of customer satisfaction is an additional achievement.

Other Influences – The Right Mixture

Above example also demonstrates the importance of the influence of logistics (spare parts and device). Looking at Error: Reference source not found. it is to be seen that more work is done by logistics, which lead to increasing of available engineer time and reduced cost. This clearly shows that work done by logistic must be included in the workflow

enhancement to avoid sub-optimization and create a high efficient workflow.

In this example of a repair center process travel times needed not be considered but shipment times. However, when it comes to a field service process travel time and as such service area optimization becomes an important issue when customer satisfaction is an important matter.

Looking at the current and future installed base of devices for the repair center, taking service parameters, and the workload per repair center staff into account, the future increase of staff can be calculated in terms of when is next staff needed for each roll.

Being able to plan this in advance is an important factor in the attempt to increase customer satisfaction and to keep cost low.

Last but not least, skills training and career path of staff influences customer satisfaction. Continuously evaluated and trained staff will performs better, thus also shortens process cycle time and has an influence on the control of "time-to-solution. This enhanced performance will be recognized by customers. Therefore, a proper career path policy for service staff is an important matter. It saves money for hiring and training new staff and prevents that customer intimacy leaves the company and goes to a competitor.

Real customer satisfaction, induced by a service operation, can be created via the ability to control the "time-to-solution. This control can significantly be improved by the enhancement of the business process . "weaving in " other elements of a service operation tightly into the business process is crucial. The example of an enhanced process illustrates that processes can be optimized to increase customer satisfaction and reduce cost the same time.

What can be achieved more?!

Dr. Reinhold O. Stapf

Founder of *the service institute japan kk,* a company focusing on the increase of effectiveness and efficiency of service operations. He has more than 20 years of experience in service management and general management and is trained in process improvement and change management.
Email: stapf@tsij.org