



# Service Management Report

A QUARTERLY E-NEWSLETTER FOR THE SERVICE EXECUTIVE

VOLUME IV

SPRING 2008

## Feature Article

### The Aging Workforce: Capturing the Knowledge and Experience of the Retiring Service Worker

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The aging workforce. Baby boomers retiring in droves. The impending knowledge drain. These topics have been a steady thread woven through many a business and manufacturing-related article lately and an issue raised by many industry analysts. However, what many people fail to realize is that it's not just an American phenomenon, but a trend faced by most developed countries. In fact, according to the *Harvard Business Review*, "Workers over age 50 will make up more than half the workforce by 2011 – and close to 80% by 2018."<sup>1</sup>



While this may not sound alarming, per se, when you consider the declining birth-rates, the down-sizing occurring due to a slowing economy and the reality that it often takes 2.5 new employees to replace just one highly experienced worker – the knowledge drain could threaten a company's bottom line if not managed in advance. According to the *Harvard Business Review*, the workforce drain could cause a "capacity risk – a potentially diminished ability to carry out the companies business of making a product or offering a service."<sup>2</sup>

According to the U.S. Department of Labor, the knowledge drain will first hit utilities, oil and gas, and manufacturing, particularly the service workforce due to changing perspectives on education as well as Generation X and Y attitudes toward work. The key to stemming the potential drain on knowledge and experience before it affects company viability is in capturing that knowledge and experience before it walks out the door. Companies need to start building a plan today. As part of that plan - apart from worker retention and unique approaches to recruiting - companies should harness the power of technology to serve as a training and reference tool for newer and less-experienced workers. Introducing automation and streamlining business processes will not only improve productivity, but will also reduce the cost of doing business.

This is especially important in service-based businesses, such as repair and maintenance or traditional dispatch work. These organizations have been traditionally under-served by IT, but, again, will be the hardest hit during this period of workforce transition. As the service workforce changes, so, too, does the technology used in service centers need to change – or be introduced - to fit the unique characteristics of this next generation. Knowledge is needed not only by the field technicians and the service representatives, but also by dealers, partners, customers and support agents.

For example, just recently I visited a blue chip company's service center and found service agents manually leafing through bulky hard-bound manuals. This manual process became a bottle neck – leading to longer customer wait times as well as poor diagnosis, dispatching and multiple service calls – and caused the company to lose money on service. This company really needed an automated process and a service knowledge management solution to capture and organize service history, service bulletins, experience and knowledge.

1 Strack, Rainer; Baier, Jens and Fahlander, Anders. "Managing Demographic Risk," *The Harvard Business Review*, February 2008: 120.

2 Strack, Rainer; Baier, Jens and Fahlander, Anders. "Managing Demographic Risk," *The Harvard Business Review*, February 2008: 120



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Some experts argue that service knowledge management technology has been available for over a decade. While that may be true, the first generation “text search” solutions were not efficient nor were they reliable. Not only were there too many results, like one would find in a “google” search, but if you entered inaccurate text, you’d never find the answer. This is an enormous problem for inexperienced workers who need to be guided through their search with dynamic questioning rather than hard-coded question trees. Not unlike the manner in which a doctor performs diagnostics for a sick patient, today’s service knowledge management technology walks the user through a simple and interactive process to identify the source of the problem and find the right solution. The system even incorporates images and sounds to assist the user in matching the problem to the most relevant solution.

For example, in a typical query, the user can enter natural language text to best describe his problem. Because different people will describe the same problem differently, “knowledge advisor” takes the request and translates it into the common vocabulary of the domain model. For the “guided,” “advanced,” and “browse” searches, it is very straightforward. The system presents the attributes to the user and the user simply selects the values he or she wants.

For free text, it’s more interesting. The user enters his or her request as a free text phrase. The input is automatically matched against the domain model to determine what attribute values are appropriate considering acronyms, synonyms, misspellings, etc. Any input terms not matched in the domain model are passed to the full text search engine and merged with the other results.

Once the technology has interpreted the request, it can then search the knowledge base for a solution to the problem. The “retrieval” engine uses case-based reasoning algorithms to find the most similar solutions that match the user’s request. The idea is that if a problem has occurred before, the solution will reuse it for the same problem in the future. Even if there is not an exact match, the system will return the most similar solution. For example: You have a problem with a 3.7 Liter engine on a Grand Cherokee. If the system did not have any solutions that matched this exactly, it may return a solution for a 4.3 Liter on a Liberty if that is the closest match as the starting point. It will also store the resolution from the Grand Cherokee to that information is not lost.

The questioning engine is used to “refine” the results set when there are too many results that match the input request. It uses a dynamic induction algorithm to determine the best question to ask that will get the user to a finite number of solutions the fastest.

But the process doesn’t end here. Once the problem has been diagnosed, then the right part needs to be ordered and the technician with the most relevant skill-set needs to be scheduled and dispatched to the right location at the right time in order to fulfill the SLA attached to the account holder.

However, a service knowledge management solution would not only reduce customer waiting times, but would reduce the amount of service calls altogether if customers could self-diagnose. In fact, one multi-billion dollar high tech company reported that after implementing a service knowledge management solution, it transferred 79 percent of technical assistance call center volume to web self-support.



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But it needn't be isolated to the technical call center. For example, if the tech couldn't diagnose based on his experience, he could access the service knowledge management tool via wireless device and identify the problem using case-based reasoning.

Case studies have proven that service knowledge management reduces troubleshooting time by solving issues once and making the resolutions available across the service organization – almost like a collective unconscious aligning everyone in the service operation.

In addition, as mentioned previously, it can also decrease the number of service calls by empowering customers, technicians, partners and dealers to reliably and accurately find their solutions through self-service. Furthermore, it can improve product reliability by identifying and tracking quality issues (#reuses per solution). And for operations that face the potential loss of intellectual capital through retirement, service knowledge management reduces service employee ramp-up time by providing a diagnosis framework.

For example, a France-based home appliance manufacturer found that in less than six months, service knowledge management improved first call resolution from less than 20 percent to over 50 percent. Level 1 agent training was reduced from 8 weeks to 4 weeks and operating costs were cut by 5 percent.

For global companies preparing for the loss of workers due to retirement, it should be encouraging to know that their collective knowledge and experience won't be lost. Instead, it can be collected, automated and accessed by everyone in the service operation. So instead of viewing this upcoming workforce transition as a problem, best-in-class companies can use it as an opportunity to manage service as a profit center rather than a cost of doing business.