



VIRTUAL LABOR MARKET

2005 COMPUTERWORLD HONORS CASE STUDY

GOVERNMENT & NON-PROFIT ORGANIZATIONS

EUROPE'S LARGEST NATIONAL ECONOMY ATTACKS A 12% UNEMPLOYMENT RATE BY USING THE INTERNET TO LINK ITS UNEMPLOYED CITIZENS TO A POOL OF MORE THAN 800,000 KNOWN UNFILLED JOBS. [20055409]

A Search for New Horizons



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SUMMARY

There's a paradox behind Germany's spiraling unemployment rate, currently at 12.1 percent. More than 800,000 jobs lie vacant in this, Europe's biggest economy, partly because unemployed workers don't know of jobs they could take that would utilize their skills. At the heart of a reform effort by Bundesagentur fur Arbeit (BA), Germany's Labor Agency, is a massive organizational and IT transformation that will better serve job seekers—and the nation's economy--by using the Internet to link the unemployed to unfilled jobs.

APPLICATION

The driving force behind Germany's push to link unemployed workers and jobs is the Virtual Labor Market, considered one of the largest and most innovative public sector undertakings in Europe. The Virtual Labor Market, its concept won an eGovernment Award in 2002, leverages the power of the Internet to contribute to the overall goal of saving E1 billion annually in public costs--and improving countless lives--by more quickly helping Germany's five million unemployed workers find available jobs. In many cases, these workers are discovering jobs they never knew existed. The initiative is designed also to greatly streamline the workload of Germany's army of Labor Agents in the Agency's 180 branches - significantly increasing the amount of time those agents can devote to helping unemployed workers find jobs and improving agents' ability to more quickly identify qualified candidates and advise job seekers.

Prior to the launch of the Virtual Labor Market in December, 2003, Germany was struggling to deal with an overburdened, increasingly outmoded system for serving the unemployed. As jobs fled to such low-cost locations as Poland and the Czech Republic, unemployed Germans faced dim prospects. It took the average German 33 weeks to find a new job.

The Labor Agency had no way of offering job seekers an overview of all available jobs. Internally the Labor Agency maintains two legacy systems for their labor agents with only local databases and regional data. Externally the Agency also maintained 11 separate online job portals for the posting of jobs, with limited data. Moreover, not all internal jobs were posted online. Because the listings of their two legacy systems are available only on a region-by-region basis; a job-seeker has no way of knowing about an opening located a few kilometers from his home if the job was listed by a neighboring office. Meanwhile, Job Agents tasked with counseling job-seekers were so inundated with paper-based administrative work that they could devote only an average two hours per day to job counseling - which amounted to about fifteen minutes per unemployed worker per month. Also, there was no system for quickly getting curriculum vitae and job applications in the hands of employers, or for directly matching job seekers with relevant potential jobs.

The Virtual Labor Market initiative sought to turn around the inefficient, ineffective, and costly status-quo. The Labor Agency embarked on an ambitious, three-year program to create a single integrated job and service portal through which job seekers and employers could find one another.

--The web-based solution would replace all 11 of the Labor Agency's online job portals, and link the human resources departments of private companies and commercial employment services -effectively creating a job database that doubles the size of the one previously maintained.

--The solution would include a job robot - an application that continuously scours employer websites for job vacancies and training opportunities, extracting the data and then adding it to the Labor Agency database.

--The new system would provide for a precise and rapid electronic matching of employees' skills with employers' needs.

--The new electronic service would allow job seekers not only to conduct job searches over the Internet, but also conduct the necessary transactions: from the posting of their CVs to the submission of applications (eRecruiting), and enable communication between job seeker and employer.

--Starting in mid-2005, the project will replace two internal legacy systems, each more than 20 years old, by extending the web-based system to also serve labor agents. The system also will include state-of-the-art business processes designed to improve the efficiency of labor agents' workload - providing them with more time to work with job seekers and employers.

The Virtual Labor Market has completed its first full year of limited operation. It is available to Germany's five million unemployed workers, the Labor Agency's 100,000 employees, and to millions of employed workers seeking better opportunities, and is considered Europe's most ambitious effort to help facilitate a reduction in unemployment.

BENEFITS

The Virtual Labor Market has enabled Germany's Labor Agency to take advantage of leading-edge technology to proactively help its citizens find jobs as it also generates significant savings. The project is responsible for minimizing increases in the nation's unemployment rate, despite a rapid exodus of jobs to low-cost locales. The project has reached two of its three milestones, with the remaining milestone of replacing the Labor Agency legacy systems planned for mid-2005. Meanwhile, the following benefits have been achieved.

Since the Virtual Labor Market's initial release in December 2003, the portal has gained widespread popularity. It is attracting 25,000 new registered users each week, including job seekers and employers. Users are relying on the site at unprecedented rates: the site receives 200 million page hits per month, making it one of the most popular sites of any type in Europe.

The Virtual Labor Market maintains 2.8 million job seeker profiles

Job seekers now have access to more than 500,000 job vacancies - including more than 300,000 that had been maintained with limited availability in local databases.

By including job vacancies that had been listed primarily on the human resources department web sites of private companies, and by including jobs listed by commercial employment services, the Virtual Labor Market has expanded the range of the types of job vacancies available to job seekers. Previously, the job vacancies that the Labor Agency could make available to job seekers were generally limited to lower-level openings.

The new project is helping to minimize increases in Germany's unemployment by encouraging worker mobility. Previously, workers had few options for seeking job openings outside their immediate region. Germany's Labor Agency is finding that workers are willing to relocate for the right job, and with the Virtual Labor Market's nationwide transparency, they are finding them.

The Virtual Labor Market relies on technology to expand the reach of job seekers by exposing them to listings of jobs they would not previously have considered appropriate. The technology allows for searches of "job-families." For example, employees accustomed to working night shifts in one industry might take advantage of their ability to work at night by applying for night jobs in different classes of jobs and in unrelated industries.

Job matching technology, which provides the capability to match highly targeted jobs, is putting job seekers in touch with positions that are more closely suited to their criteria. For example, the previous technology only could provide a fairly rudimentary search, generally only by profession, location and salary. (The search of a job as a raw ingredients chemist in Munich with an income of \$35,000 would only find exactly that job.) Now, with the ability to include multiple criteria, such a search would yield broader results. (It might also show a job as a purification chemist in Nuremberg with an income of \$36,000.) The result: linking job seekers with vacancies they never would have known about.

Such new capabilities have greatly boosted the Labor Agency's ability to match jobs. In the Virtual Labor Market, almost 2 million job matches are generated each week.

And the transaction capabilities are speeding up the job search process. By registering on the Virtual Labor Market, posting CVs, applying for jobs and communicating with potential employers, job seekers are cutting back on the amount of time that they are out of work, helping the Labor Agency move

toward its goal of saving E1 billion in unemployment costs.

IMPORTANCE

Leading-edge information technology has given birth to this profound booster of Germany's labor economy, which is also the largest government portal application in Germany.

The open and scaleable technical architecture of the portal is based on J2EE and enables the implementation of complete and efficient placement processes. The BEA Weblogic 8.1 application server includes 25 PA-RISC CPUs with 56 gigabytes of RAM.

Overlapping data files relating to vacant positions and job seeker profiles are constructed in clearing databanks, and then made available via the Internet to all those involved in the job placement process. The system uses an Oracle 9i database, with 16 PA-RISC CPUs including 32 gigabytes of RAM.

The service portal includes applicant/application management, integrated messaging services, and self-administration of job-seeker profiles and employment vacancies.

Intelligent IT-based search mechanisms optimize the matching of candidates to vacancies, increasing the accuracy of placement targeting. The Elise Matching Engine consists of 59 servers with a total 118 Intel Xeon CPUs.

Consistent and current data storage and data transfer with job market partners is made possible through the internationally relevant HR-XML standard.

The system boasts 99.95% availability, and an average response rate below 2 seconds.

ORIGINALITY

The Virtual Labor Market marks the largest government effort to leverage the Internet and leading-edge technology to minimize rising unemployment. While a few other European nations have made efforts to help job seekers electronically connect with employers, none has embarked on a project of such scale. The Virtual Labor Market establishes Germany's first nationwide overview of all job vacancies via a centralized job clearing database.

The project is unique for several reasons. The capability of matching job-seeker profiles with available positions is far more sophisticated than anything previously available. It leverages an innovative, high-performance matching engine that takes supply and demand into consideration, bases matches on all information in detailed profiles—not just a few criteria—and always finds the best match within all records, whether the positions are in other regions, on commercial sites, or on the human resources sites of private companies.

Uniquely, the project is a reusable solution in which a single system replaces multiple existing systems, including 25 online job portals operated by the Labor Agency and two major internal legacy systems. The project is innovative in its level of integration, even affording unemployed job seekers electronic access and matching capabilities within private companies.

The Virtual Labor Market reflects unprecedented cooperation with commercial job boards. Instead of putting them out of business, the Labor Agency works in tandem with existing commercial placement services, ensuring that job seekers find matches that would not previously have been considered.

Transaction capabilities that provide job seekers with the ability to post CVs, apply for jobs, and communicate with potential employers electronically as part of the an online job search are new to Germany's job seekers, introduced with the Virtual Labor Market.

This project represents the first major effort to reduce bureaucracy within Germany's Labor Agency. When the consolidation of internal legacy systems is complete in late 2005, labor agents will be able to electronically manage caseloads, manage accounts with employers, and perform benefits administration and scheduling tasks in a fraction of the time it currently takes them. Self-service features that streamline processes also will save time. This will substantially increase the amount of time available to counsel job seekers and to work with employers on job development and training opportunities.

SUCCESS

The Virtual Labor Market can be viewed as an unqualified success from a number of perspectives.

As the first major effort to tackle Germany's biggest political and social challenge, the project is providing the nation's five million unemployed workers with nationwide transparency into all available jobs and training programs. Not only is it opening up job seekers to hundreds of thousands of potential jobs—more closely matched jobs as well as jobs that would have gone unnoticed--it also is greatly speeding the process of acquiring the right job. On its own, the job robot has found 100,000 job vacancies. The transactional capabilities alone are enough to distinguish this program as a landmark success.

Almost as important, the project is by its electronic nature giving millions of Germans a critical skill to succeed in the 21st Century: the ability to use the Internet for such important necessities as job searches. Two-thirds of the nation's population uses the Internet, either at work or home. By making the Internet the mainstream channel for job searches and recruitment, Virtual Labor Market serves as a training mechanism for the millions who have yet to develop the ability to use the Internet. This is no small accomplishment, as it will help prepare workers for a skill that, increasingly, is a requirement for employment. Based on the record-setting numbers using the new service, the Labor Agency, and its partner on the project, Accenture, have achieved their objective of building an interface that is as user-friendly as it is sophisticated and powerful.

Virtual Labor Market is eGovernment at its best. The new technology provides for a more sophisticated level of job seeker profiling. Labor agents learn more about the people they are serving, and as a result, can act more appropriately. They also can more easily filter out candidates that are most likely to find jobs on their own, and devote more times to those in most need.

The many unique elements of this project—including the job robot that culls private industry sites for job vacancies and the intelligent matching capabilities designed to match job seekers with highly targeted jobs—are proving their value, more speedily moving the unemployed into jobs. It is helping the Labor Agency reduce by one week the 33-weeks that the average laid-off German spends out of work, an objective that is both minimizing rises in the national unemployment rate and moving the nation toward its goal of saving E1 billion in annual unemployment costs.

And as the project moves toward its final stage in 2005, Virtual Labor Market will advance that much closer to its objective. When the internal legacy systems are fully integrated later this year, labor agents will be able to electronically conduct a range of processes that now are done manually, including the dispensing of advice to job seekers. That will give them more time to work with the unemployed.

DIFFICULTY

The Labor Agency faced multiple challenges as it sought to bring its vision of a Virtual Labor Market into reality.

The Virtual Labor Market was one of the biggest web-based transactional applications worldwide. It needed to serve 100,000 internal users and more than five million external users. The technical challenges of such a large-scale project were daunting. Much of the program's success can be attributed to the developers' ability to make use of proven components, such as technical architecture from an eGovernment solution in Belgium, matching technology developed for projects in the United Kingdom and the Netherlands, and business processes developed for the United States.

The challenge of replacing the legacy systems resulted in a huge number of change requests during the development phase. Also, the Labor Agency was tasked with developing and negotiating a joint set of future business processes that needed to dovetail with those of 24 other reform projects that were part of the Labor Agency's transformation effort.

The Labor Agency was required to navigate tricky political waters. The Reform of the labor market is seen as the essential challenge on which the current government will be measured. The Agency is battling its tarnished image as a huge and inefficient organization, and at the time is driving the reform program to a success.

If anything will reverse that image, it's the potential broad social and economic impact of the Virtual Labor Market.

