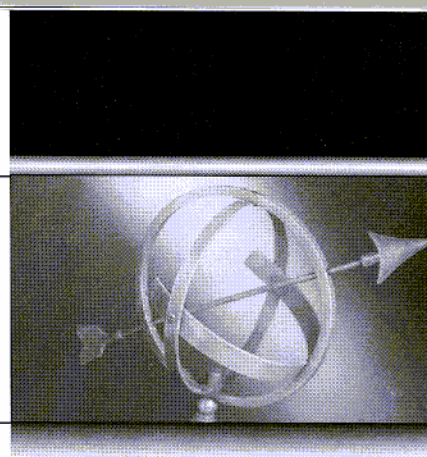


# In Search of Intelligent Self-Service

By Naomi Bloom



**D**uring the last decade, the business of human resource management (HRM) has become far more complex, primarily as a result of changes in work and workers. Even as most organizations have reduced dramatically the size of their HR departments, these same organizations have been struggling to:

- Attract scarce, qualified workers;
- Improve the match between worker capabilities and the evolving nature of work;
- Increase the productivity, integrity and focus of workers;
- Improve the quality and quantity of workforce retention;
- Manage rising labor costs while meeting worker expectations;
- Create flexible, agile and resilient organizational designs;
- Manage a work force that is increasingly composed not just of employees but also of every flavor of contractor, from independent contractors through PEO-provided workers to entire teams of contracted consultants — all of which are likely to be telecommuting, working flexible hours, taking parental leave, past the usual retirement age, culturally diverse, etc.;
- Minimize the impact on flexibility of regulatory compliance, to include regulations that now transcend national borders; and
- Manage the administrative costs and effectiveness of increasingly complex and diverse HRM programs, including mass-customized total compensation plans, workforce development programs, and staffing/recruiting strategies.

The theory was that by automating more completely their administrative and policy police HRM work, those remaining HR professionals could become consultants and strategic partners to line management, a much more highly valued role. The centerpiece of this theory's highly automated, operationally

excellent HRM delivery system was self-service, i.e., the distribution to employees, managers, position seekers, and many others, data access and entry so that they could handle most of their own HRM transactions.

Well, that was the theory! In actual practice, very few organizations have yet achieved sufficient operational excellence in their HRM delivery system to free up HR professionals for this more highly valued work. Of even greater importance has been the widespread failure to provide automated tools to those same HR professionals, not to mention to line managers and other members of the workforce, to help them do this more valued work. Although there are very good reasons for this gap between theory and practice, the HR community is still expecting (hoping?) that self-service, once fully implemented, will indeed be a panacea for reduced administrative costs, increased administrative effectiveness, improved retention, etc. — that self-service will save the day.

It is said that those of us who do not learn from history are forced to repeat the mistakes of the past. With so much riding on universal HRM self-service, this paper reaches into my own past — and yours — to see what we can glean from experience, to see what worked and what didn't work, and to apply these lessons plus current technology to create the self-service we really need.

## A HISTORY OF HRM SELF-SERVICE

Do you remember when service implied humans? When someone pumped your gas? When there was no charge for getting cash at the bank? When there was a personnel representative down the hall?

When I began working, the personnel rep down the hall held a new employee orientation meeting on our first day of

work at which a bunch of new hire forms were completed by each employee. Guided by the orientation leader, we happily set about filling in the required forms, one for each HRM plan or program, each with their own instructions. Everyone was issued an employee handbook and, as needed, various manager handbooks, for which updates were issued periodically along with page insertion and removal instructions. Although I wondered why I had

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to write my name 25 or so times, once or twice each per form and often in a different format and location on each form, I wasn't yet bold enough to question the process. With all forms completed and approved by two or three people, off we went to start our new jobs.

Every payroll cycle, we filled out a blank copy of the time and attendance form, with help as needed from our manager or payroll representative. As other things changed, we filled out a blank copy of the relevant forms again, with help from our personnel rep, payroll clerk, manager or sometimes, all three. To prevent crazed employees from submitting subversive forms, every form re-



quired approvals from our personnel rep, payroll clerk, or manager, any two out of three, or all three out of three. Fortunately, we had only one compensation plan (base pay); three benefit plans (health, life, and disability insurance); limited training requirements or opportunities (and they were assigned to us, not selected by us); no PCs, cell phones, laptops or PDAs to track; one home address and phone number; and area codes, when they were first introduced, were expected to be quite stable.

If any payroll or personnel data was automated, and this was rare except at the largest companies, the relevant data was transcribed by data entry operations from the user-oriented forms to "feed the

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beast" card format forms. If we needed to know anything, we plunged into our employee manuals, discovered that we hadn't removed the old pages nor inserted the new pages in two years, gave up, then asked our manager, payroll rep, personnel rep, or all three, and then asked them again to sort out the inconsistencies.

There was always someone to hold our hand, answer our questions, make suggestions, and care that our employee or manager needs were met — even if that someone was wrong, inconsistent, a bit too nosy and/or chatty, or hard to track down. Employment life was good!

By the late 1960s, most large organizations were automating at least payroll — in-house or outsourced — and some advanced thinkers were including (perhaps grudgingly) a few personnel data elements in the employee master file. This automation of payroll plus was paid for by reducing the headcount of payroll,

personnel and departmental clerks, really the last of the easy cost-justifications for core HRM delivery system (HRMDS) automation.

To support the new system, all the personnel forms were redesigned to eliminate transcription errors (but not keying errors) by data processing (DP) operations and to make "feeding the beast" easier, e.g., really obscure card codes and column numbers were added, field lengths were tic-marked, codes replaced department names, etc., and all flexibility was banned. A bunch (much bigger as benefit plans were added, 401(k) plans were introduced, taxes grew more complex, etc.) of more complex new hire forms, each with its own instructions, was still completed by each employee during new hire orientation class, but it took longer. Everyone was still issued an employee handbook and, as needed, various manager handbooks, for which updates were issued periodically along with page insertion and removal instructions, and all of these grew bigger with less likelihood of them being kept up-to-date.

With initial automation of payroll and some personnel data, came a major process improvement. Personnel action turnaround documents replaced blank forms once you were onboard, thereby reducing errors, shortening cycle times, and making at least some data readily available. However, every payroll cycle, most of us still filled out a blank copy of the time and attendance forms, with help as needed from our manager or the payroll clerk, because the labor distribution rules were too variable and complex, the turnaround schedule was too tight, and the risks of failure were too high to use turnaround documents here.

As other things changed, we filled out the personnel action turnaround documents again as well as such independent forms as were required, with help from our personnel rep, payroll clerk, manager or all three, but they were all less available since we'd reduced their headcounts to pay for this initial automation. We truncated and anglicized our names to fit the turnaround document's allowed field structures and lengths, used the meaningless codes to save precious computer memory, and watched ease of "feeding the beast" take over manual form and process design. Still fearing sabotage from crazed employees,

and recognizing the further complexity of "feed the beast" forms, we added DP operations and various audit approvals to the paper process. There were several new benefit plans and some required training before we could select our options, but there were still no PCs or cell phones to track, minimal self-enrollment for training, no corporate desire for employees to take responsibility for their careers, etc., so the volume of changes and new transactions was still manageable.

If you needed to know anything that wasn't on your personnel action turnaround document, you asked your manager and/or the right personnel specialist and/or your personnel rep and/or your payroll rep, and then asked everyone again when their answers weren't consistent. Even with the headcount reductions, there were still people around who could answer your questions, make suggestions, and care that your employee or manager needs were met. But with fewer personnel and payroll pros and more complex plans and practices, the odds increased that these people were unavailable when needed, wrong, inconsistent, and/or intrusive. But work life was still pretty good.

#### **WHAT WE SHOULD HAVE LEARNED BY 1975!**

We should have learned that no one likes to truncate or otherwise mangle their name, live within prescribed field lengths, remember meaningless codes, or lose the flexibility of writing notes in the margins just to "feed the beast." No one wants to track down the one person who has the right answer and find out that they've quit, been downsized, or are on vacation, or to discover that you get different answers from different, so-called experts. Only the employee really knows where they live and, if they choose to lie, only they are harmed, so there's not much value in approving address changes. More importantly, employees who lie about their addresses or do other subversive things with their personnel forms should be fired before they do real damage.

We did recognize the benefits of using turnaround documents for process improvement. These included a reduction of new data errors, faster cycle times for data changes, ongoing data validation at



its source to improve the quality of existing data, fewer pieces of paper to handle, lose, file, etc. With the related reduction in costs, at least some data was readily available for quick and easy reference. However, those turnaround documents, which were designed to "feed the beast," sacrificed something important when, unlike the original forms, they banned writing in the margins. Without being able to write in the margins, we had no easy, systemic way to highlight something unusual or to note approved deviations (some would call these innovations) from the rules.

Another lesson was that personnel and payroll reps, as well as specialists, are needed, at least by phone, by all shifts, all work locations, etc. — by everyone, everywhere, any time — and they'd better know their stuff and not have loose lips or word gets around quickly. With human service, it's hard to reduce costs without reducing service levels and even harder to ensure availability, timeliness, efficiency, accuracy, consistency or privacy. But without that human intelligence, personnel forms and their instructions were largely unintelligible because they were designed to "feed the beast." Our unsupported completion of those forms could lead to odd results, missed opportunities and linkages (e.g., the address change that requires a new state tax form), and no mechanism for catching and correcting business rule errors or other systemic problems.

### WHAT WE DID IN THE 1980S

During this period we really began to eliminate human services in exchange for a stripped down, do-it-yourself business approach to life's transactions. ATM machines and "self-service" gas pumps took hold. HR and payroll went online to real data so that we could make faster and more accurate updates of what we thought had changed. But God forbid we wanted to change something in the middle of a payroll cycle. We were able to produce faster and more accurate answers when called or visited, but this improvement was limited to the automated data, i.e., to much the same data as had been on the turnaround document, as of the end of the last payroll cycle.

There was a growing emphasis on distributing source data capture throughout

the organization, so everyone whose work generated back office transactions began learning how to fill out "feed the beast" forms and complete equally unfriendly data entry screens. This was really serving the beast online rather than self-service, but we learned a lot during this period about just how hungry everyone was for data, even if they had to learn a lot of weird commands to get it and even more weird codes to understand it.

The complexity and volume of HRM transactions grew considerably during the 1980s as 401(k)s got more options and emphasis, more flexible benefit options gave rise to open enrollments and confusion over choices, we had more contact information, more organizational changes, more training, the expatriates wanted attention, etc. But, there were fewer and less knowledgeable HR reps, payroll reps and HR specialists as we downsized staff functions further (with enhanced early retirements for those with the most knowledge) to pay for our automation. And please note that, by then, the personnel rep had morphed into the HR rep.

Because the cost, cycle time, error rates, etc. of still mostly paper-based source data capture was killing large organizations, they began experiments in even broader online source data capture. These custom-built and standalone employee source data collection and access kiosks included touch screens and multimedia and were usually placed in areas where large numbers of employees congregated. These early self-service capabilities did require some orientation and training (thus making them possible only for concentrated populations whose work schedules made such training feasible), were based on proprietary technologies (just as the world was going to open systems) and were far too expensive for all but the very largest organizations. Furthermore, they were usually based on yesterday's information. Thus, when changes were made at these kiosks, they didn't take effect until tomorrow (or the next day), and then only if the new data passed the "real" edits. Nonetheless, when implemented effectively, the use of these kiosks showed just how hungry employees were to take responsibility for their own data and to gain access to information online.

For the many organizations that couldn't afford kiosks or whose workforce dispersal made them an inappropriate solution, we developed custom interactive voice response (IVR) — automated self-service for the rest of us. IVR offered access for everyone, anytime, everywhere, thanks to the by-then ubiquitous telephone (which was by no means ubiquitous when I started work). There was no need for training because the marketplace had provided training. There was no need to invest in special equipment for the users, because the marketplace had provided that, too. In fact, IVR sounded too good to be true — and it was — be-

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cause it ran out of steam with more than two levels of selections or when there was a need to enter text. But IVR was very effective for simple transactions, e.g., selecting benefit options during an open enrollment period as long as those options (the business rules) were explained via some other mechanism, or enrolling in a course as long as the course options and content (more business rules) were explained via some other mechanism.

While the kiosks offered a means of accessing a lot of useful information, about the company, specific benefit plans, new HR plans and programs, etc., IVR was pretty much a one-way street, capturing simple, high volume transactions at a very reasonable cost. But we weren't daunted by the need to still send a great deal of paper-based information to each employee and manager. We liked IVR, so much so that we took advantage of everyone's offering, with different toll-



free numbers for 401(k), health care, dental, EAP (employee assistance plan), disability, and on and on. Fortunately, we used the same password for everything, or we'd really have been lost. But how we wished that the IVR setup, with all its advantages, could somehow support two-way communications, more in-depth interactions, and be delivered in an integrated fashion (i.e., integrated with our core HRM software).

Investments in kiosks and IVR, not to mention in new core HRM software (remember those real-time updates and more HR data), were justified by losing more headcount. Except for the few organizations with kiosks and those rabbit-like

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800 numbers, everything else remained pretty much as it had been. We continued to use, well into the 1980s, a mix of personnel action turnaround documents and T&A (time and attendance) forms, and a growing pile of special purpose forms all designed to "feed the beast." For the most part, we could only update data and business rules coincident with payroll cycles — except for early adopters of those first HRMS packages which offered a rudimentary effective dating capability. Our employee and manager manuals got further out-of-date and were now stuffed with summary plan documents, special forms, and all of our IVR 800 numbers and passwords. And the shrinking ranks of human resource staff weren't able to keep up with our questions, offer suggestions or care about our employee or manager needs. Employment life was going downhill fast.

### **WHAT WE SHOULD HAVE LEARNED IN THE 1980S**

We saw the administrative improvements and savings that others were getting from IVR and kiosks and from real-time HRMS packages, and we promised those to our management if they would fund our own investments in those technologies. But we failed to see how fragile were those savings, how dependent they were on just the right mix of transactions and on not answering too many questions.

We should have learned that training every employee to use the kiosk or other computer-based data entry mechanisms, and keeping them up-to-date on either the HRM input "technology" or the HRM business rules wasn't possible! Furthermore, providing HRM input technology that's special purpose so that employees must use different input technologies and interaction protocols for different business events annoys the user and costs too much. Making source data capture work when other, separate mechanisms are required to explain the business rules or obtain essential information doesn't achieve huge cost savings unless you accept reductions in service levels and customer (i.e., employee) satisfaction. But, the reductions in service were not yet widespread or deep or investigated enough to offset our enthusiasm for continuing our experiments in self-service.

IVR taught us that there's a lot to be said for taking advantage of the marketplace to provide input mechanisms and train everyone on them. But it should have also taught us that self-service that abandons you to cope with poorly designed IVR menu loops, lost hard-copy benefit summary plan documents, etc., while demanding that you input the next item doesn't feel like service. Self-service that's not up when you can get to the phone or kiosk or that gets back to you three days later with an error report from the "real" edits doesn't feel like service.

Perhaps most important, those kiosks, and even the turnaround documents should have taught us that even rudimentary self-service exposed the oddities of back-office systems whose behavior had been buffered by the hard work and institutional knowledge of long-service personnel and payroll reps. It can take more effort to work around

the oddities (translate: poor data and technology designs) of back-office systems than to fix or replace them, but the return on investment (ROI) case for such investments is not obvious. So most organizations implemented their shiny new real-time HRMS packages without cleaning up their data designs, in which they were aided and abetted by the vendors of these packages who had never designed their own data structures.

### **THE 1990S WEREN'T ANY EASIER!**

The modern era for HRM delivery system software began in the early 1990s with the remarkable success of PeopleSoft in demonstrating how a new architectural paradigm, client/server, could change forever the way we viewed and used HRM software. By harnessing the power of the PC, and betting on its eventual ubiquity, PeopleSoft brought together several key technologies — relational data base, graphical user interface, and a two-tiered cooperative processing architecture — to create the first client/server HRM software package. For those of us used to the green screen of host-based computing, this really did look like the solution to HRM self-service.

So, as fast as we could make the business case, we implemented (or tried to implement) new client/server core HRM packaged software with plans to deploy it widely. We put the HR, payroll and other frequent users online to do their own transactions, then planned how best to rollout source data capture to the masses. We kept/increased IVR for selected transactions, replaced standalone kiosks with public PCs online to our new software, and outsourced a range of benefits administration and other functions (each of which had its own toll-free number). This time we were sure that true self-service was in our sights, so we paid once more in reduced headcount for these investments in technology.

*Oops!* There was no way to support 10,000 concurrent users with first generation client/server architectures — not at a price that HR or anyone else could afford. *Oops!* There was no way to train every employee the first time, let alone whenever upgrades were done, to use the shiny new GUI. *Oops!* Those early client/server core HRM software packages weren't designed for normal users.



They were reincarnations of "feed the beast" forms and processes with a GUI. They were designed from the database out to resemble forms and processes that were very familiar to payroll and personnel staff but totally unknown to everyone else and, therefore, unusable without considerable, ongoing training. *Oops!* We had already downsized the HR and payroll areas in order to pay for the new client/server software, and there was no one left to process the transactions, let alone to answer questions.

And then came more painful lessons. There was no way to maintain our new client/server beast, let alone "feed the beasts" of our third-party administrators, etc. The proliferation of third parties with their IVR setups added more 800 numbers and PIN numbers and interfaces and, oh no! more costs, to our already over schedule and over budget client/server implementation. For every person we did put online, whether to the client/server beast or via 800 numbers, there was an increase in questions to our HR and payroll staff, and we sure weren't set up to handle all those questions.

So in came the consultants, many of whom had advocated our migration to the client/server thing and even provided systems integration services, with some further "suggestions." What we needed now were the economies of scale of plain vanilla implementations, achieved by changing our processes to fit the package and then standardizing those processes across all our business units. Quite quickly, shared services and an HR call center were presumed as the organizational vehicles for achieving these economies of scale. Employees would call a single toll-free number to handle all of their transactions, and the shared services (alias centralized HR operations) group would handle all the interactions with third parties.

*Oops!* Call centers needed another set of software, e.g., for call tracking, information retrieval and script development, for which we had never budgeted. *Oops!* Those call center reps (CSRs), a whole new breed of clerks, either needed scripts (translate: which must be written and maintained) from which to read the appropriate answers or they needed to be highly trained and re-trained as things changed (translate:

more highly paid and with costly, ongoing training). *Oops!* Remember those employee handbooks, summary plan documents, procedures, etc.? Now they too, along with the CSR scripts, must be maintained and kept in sync.

And then came more painful lessons. Running a 24/7-call center at our corporate headquarters location was too expensive, so we moved it to Kansas or Nebraska where facilities and telemarketers were less expensive. Since there weren't enough knowledgeable payroll or personnel reps to staff the call center anyway, and we promised savings by replacing them at telemarketer prices, we went to a tiered structure (did you ever wonder why everyone doing this has the same number of tiers?) that reserved the really knowledgeable people for answering the tough questions. With essentially telemarketers reading HR policy or practice scripts, or expensive, but new, HR reps (we had already downsized the really knowledgeable folks) doing the same thing, was it any wonder that relatively simple questions were flooding the upper tiers? Since running a 24/7-call center isn't our core competency, perhaps we should have outsourced it?

But there was also real progress toward true end-user self-service during this period. Some leading firms, very large, very rich, or very adventurous, bought expensive, semi-custom self-service add-ons (really event-oriented data capture software) for the client/server thing that was supposed to do self-service in the first place. They threw in some integrating middleware, bought another server, learned how to maintain critical edits in two places, and started the rollout of address changes, at least to those employees whose PCs were powerful enough to hold both fat client HRM and self-service software. But except for the favored few, service at work was feeling very much like service elsewhere — not very good!

The truth was that most (we will mention no names) fat client/server architectures could not support 10,000 (and beyond) concurrent users. Furthermore, software designed for frequent, well-trained (even bullied into submission) users, however robust and elegant, didn't work for occasional users who couldn't be trained formally. Of particular interest was that those few organizations that

were able to deploy their client/server HRM platform for some measure of self-service discovered that the user interface, independent of ergonomic flaws for casual users, was designed from the database out rather than from the customers' business events in, giving us pretty GUI versions of "feed the beast" forms.

We didn't like talking to a telemarketer when we wanted a fast, clear and insightful answer to a policy question or guidance around how to get a problem solved. And scripting telemarketers, and keeping those scripts up-to-date and synchronized with all the other HRM communications and documentation, is real work. Each time we changed the policy or plan, we had to update the

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software, communicate with employees and update the call center scripts, with all such changes having a common effective date. More important, employees hated having several layers of intervening organizations and people that stood between them and getting a full picture of what happens if they take the new assignment or change their addresses.

### **THE INTERNET CHANGED EVERYTHING!**

Just as we were all convinced that self-service, properly implemented, was too expensive and difficult for most of us, the Internet changed everything. Suddenly we were presented with a universal user interface. The browser, like the telephone before it, was intended to be available everywhere, anytime and, increasingly, to everyone. Again, like the telephone, it re-



quired no special investments in technology or training, just investments for the HRM capabilities. It was an interface and, more importantly, a computing paradigm that was designed to support 24/7 operations and an almost unlimited large number of concurrent users.

Having been first to client/server in many companies, HR now moved quickly to seize this new technology. Up went the HR intranet with all of the manuals, SPDs (summary plan descriptions), corporate policies, organizational charts, course catalogues, and company stock price, thereby ensuring access to up-to-date information. While waiting for our

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core HRM vendors to provide Web-based self-service capabilities (and the wait here was painful), we built our own custom (usually with consultant help) or bought increasingly packaged, event-oriented address changes, benefits enrollment, and transactions for the Web (although early versions of this were often more e-mail than Web), thus putting a self-service structure over the client/server application structure, which was organized more by function than event. Since Web access wasn't yet ubiquitous, although it was certainly headed that way, we kept the call center for those without Web access and to handle the tough questions. Are we done yet?

We quickly learned that network or Internet computing does make feasible running an HRM application from anywhere, 24/7, and with thousands of concurrent users. Therefore, HRM services can now be delivered to anyone, any time, anywhere. However, there remains for many organizations a pretty big delta between what is possible and what they are capable of funding and delivering. We are convinced that the Web browser will become as ubiquitous as did the telephone over

the first decade of my career and, just like the phone before it, that the marketplace will provide the training and the infrastructure at no incremental cost to HRM.

Like all pioneers, those in the vanguard of Web-based employee or manager self-service quickly discovered the good news and the bad news. The good news was that Web-based employee self-service did a great and very cost-effective job with address changes, course enrollments and benefit plan enrollments. The bad news was that those online transactions made no provision for telling employees that our HMO doesn't provide coverage to their new address, that the course they selected is outside the reimbursement guidelines for their business unit, or which HMOs provide statistically superior results for their high-risk pregnancies?

The good news was that managers were pleased with their self-service set-up for salary planning, performance appraisals and applicant tracking. But managers now wonder where and when they will learn how to tailor available total comp plans to motivate and retain specific individuals, against which competency profiles to measure individual development needs, or how to conduct behavioral interviews? The good news is that managers like self-service in concept; the bad news is that they'd much prefer having a really good HR pro at their elbow.

HR professionals are really pleased with their enhanced self-service capabilities, especially their ability to produce administrative analytics like headcount, cost to hire, and attrition, but they too wonder where and when they will learn how to determine if they have too many or too few people, whether the ones leaving should be leaving, and whether they're hiring the right people in the first place. The good news is that HR pros think that the new Web-based self-service is much better than being a data entry clerk, but they know enough to recognize that it's a far cry from what they really need.

#### **IN SEARCH OF INTELLIGENT SELF-SERVICE**

So what's still missing? Why isn't everyone satisfied? Why do we still need call centers to handle even the most basic questions from employees and man-

agers, not to mention those pesky applicants who are finding us through our own Web site?

I think that the answer is obvious, if we will just learn from our own history. With every stage of automation in HRM, we paid for that automation with promises (sometimes realized) of cost savings. Whether through direct headcount reductions or merely via the more effective use of the people we had, we convinced ourselves and management that we could use economies of scale and massive automation of our data, business rules, and transactions to achieve all kinds of breakthroughs via self-service. Empowered and more satisfied employees would reduce attrition. Managers would manage more effectively. Applicants would be hired more quickly and cost-effectively. And HR professionals would be welcomed at every business strategy meeting — and have the time to participate fully.

Perhaps if we had studied our own history, we wouldn't have missed the most important point of all in our move to Web-based self-service. While we were busy automating the transactions and posting static text to the intranet, and paying for all of this with further reductions in the human intelligence that had kept the HRM delivery system running all these years, many of us didn't anticipate what would happen when we eliminated that human intelligence without embedding it in the automated components of the delivery system.

The results of eliminating this human intelligence have been much more profound than a misspelled street name in an address change. Frankly, we don't have any idea how many self-service transactions have been done in conceptual error even as they pass traditional edits. They used to pass a human editor before they were entered into the system, a human who would notice that your HMO doesn't offer coverage in the area in which your address change places you. And now those human editors are no longer a part of the process.

Before we are victims big-time of the law of unintended consequences, I think we'd better start putting the intelligence back into our HRM delivery system. This idea of embedded intelligence doesn't suggest that we go back to the manual



paper flows and neighborly HR reps of yesteryear but rather that we learn how to automate such intelligence and embed it throughout the HRM delivery system.

But first things first. In order to deliver automated intelligence correctly, even assuming that we knew how to automate it, we need to know who our customers are with much greater granularity than most self-service operates today. We need to be able to recognize individual users, along with all of their multiple concurrent roles, by date. This means knowing, for an individual employee, that he/she holds two part-time positions with the organization along with the details of those positions (e.g., work unit, work location, job, work schedule, all total compensation plans for which the position creates eligibility) as well as knowing that this employee is the floor safety coordinator in one of those positions and has "applied" for an open position which would be a promotion if he/she is selected. Furthermore, we need to know, when that same employee logs on, all of his/her demographics, work history, competencies, etc. With this very granular, role-based information, the system can ask the employee in which role he/she wants to interact with the system, and then proceed, based on the employee's answer, to present only those system capabilities that are appropriate. This is what should be meant by granular, role-based delivery of system capabilities. It's much more than knowing that you're an employee or a manager.

Next, with this more detailed understanding of the customer, we want the system to deliver, proactively, information of consequence to that customer: "For your new assignment starting tomorrow, you haven't yet confirmed your attendance at the project's kickoff meeting," or "For the applicant you're about to interview, here are the vetted behavioral questions appropriate to the opening's competency profile and here, as a reminder, are the cultural context-based guidelines on what not to ask." We want role-based, proactive delivery of system capabilities.

With Amazon.com, Land's End, and other consumer Web sites setting the standard for the customer's Web-based experience, the bar has been raised. We expect a seductive, not just a friendly, user experience which anticipates our

needs, learns from each user exchange, makes suggestions, corrects errors gently, addresses the user in the user's preferred language and with the appropriate level of hand-holding, and, ideally, talks to me!

At work, we expect the HRM delivery system, whether via a corporate portal or more directly, to provide "one stop shopping" for all of our work-related information, questions, events, etc., including:

- What's new in my organization?
- What are my assignments?
- What tools are available to help me do my assignments, or do them better?
- In order to do my assignments, I need:
  - Travel arrangements;
  - Supplies procurement;
  - Travel advance;
  - Leave approval for a day off at the end of my trip;
  - Just-in-time training delivered over the Web;
  - Equipment issued (or updated); and/or
  - Work schedule and/or location changes.
- I'm experiencing a life event (e.g., birth of a child, marriage, new home, retirement planning) and I need to know:
  - What are the total compensation implications?
  - What resources are available to me?
  - What are the work-related implications?
  - What further actions should/must I take? When?
- With respect to my career, I need the tools to:
  - Keep me marketable.
  - Help me identify and apply for specific opportunities within the organization.
  - Identify the opportunities for my current assessment profile, i.e., for my set of competencies, knowledge, innate abilities, learning style, organizational behaviors, geographic and other preferences, etc.
  - Locate the opportunities for someone interested in a particular set of duties and responsibilities, i.e., in a particular type of work?
  - Evaluate the match between the assessment profile for that type of work and my current assessment profile?
  - Locate the resources to help me change my assessment profile to fit the opportunities of interest?

For employees with managerial or leadership responsibilities, much more intelligence is needed from the HRM delivery system, and there is much greater value to the organization from delivering intelligent manager self-service than even from intelligent employee self-service. Here's where we turn each manager into an HR-enabled leader with tools for:

- Total compensation planning and distribution, and the related metrics;
- Performance appraisal and development planning, and the related metrics;
- Recruitment, deployment and assignment of staff and contractor resources, and the related metrics;

**The good news is that HR pros think that the new Web-based self-service is much better than being a data entry clerk, but they know enough to recognize that it's a far cry from what they really need.**

- Project or task planning and management;
- Resource planning and management, to include financial resources (i.e., budgets), human resources, facilities, equipment, etc., and the related metrics;
- Personnel action planning, review and approval or denial; and
- Recording and resolution of work place accidents and incidents, complaints and suggestions, and the related metrics.

But this type of self-service does not come easy. Just to get started, we need a much clearer way than we have now to express the many flavors of embedded intelligence, from the simple to do, but low value flavors to the extremely difficult to do, but very high value flavors. Hal-like behavior may not yet be a realistic goal, but a lot more is possible with today's technologies than we are yet seeing in most of our HRM delivery systems.

To get us started, I'd first like to propose a taxonomy of embedded self-ser-

vice intelligence. This is a work in progress with all the attendant imperfections. How many of these do you recognize and/or are you doing or planning? From easy and modest value to very hard and high value:

- User inquiries to static text;
- User-initiated standalone data changes (with attribute, event and context edits);
- System-initiated distribution of static text;
- User inquiries to personalized text;
- User-initiated standalone data changes (with attribute, event and context edits) with generated inquiries to personalized text;
- System-initiated distribution of personalized text;

**Before we are victims  
big-time of the law  
of unintended consequences,  
I think we'd better  
start putting  
the intelligence back  
into our HRM  
delivery system.**

- Life event initiated chain of event data changes (with attribute, event and context edits) with generated inquiries to personalized text;
- Business event initiated chain of event data forecasts and/or changes (with attribute, event and context edits) with generated inquiries to personalized text; and
- Advisory component to each of the above.

A major challenge here is that, as you go up this list, there are points at which we have to change the technology we're using in order to scale ourselves (in volume, complexity, user-granularity, etc.) while remaining on roughly the same type of intelligent self-service. Consider user inquiries to personalized text or the next one, user-initiated standalone data changes with generated inquiries to personalized text, or even the next one, system-initiated distribution of personal-

ized text. In all three of these flavors, adding indexed scripts into the self-service flow, in the form of frequently asked questions (FAQs), does produce an initial benefit. However, such an approach doesn't scale as the number of business rules grows nor does it cope well with the effective-dated nature of so many HRM plans, practices and policies. Using traditional procedural language if/then statements to add more advanced, event-based data edits to these same self-service events creates different but equally bad scaling and effective-dating problems. And the limitations of these techniques become even more obvious when you consider the need for many HRM business rules to be described in terms of their applicability by work unit, work location, job, etc.

To provide scalable and maintainable embedded intelligence, to include personalized content, natural event chaining, and proactive guidance throughout the HRM delivery system requires an entirely different approach. Here's where we must draw upon the basics of artificial intelligence to obtain an inference engine, one which can construct, on the fly, if/then expressions from granular business rules and variables. Then we need to capture all of the relevant business rules and their variable possibilities as generalized knowledge and content. To extract these business rules from static text documents, like policy statements and SPDs, and get them right, we must apply a robust knowledge modeling methodology — and then apply it again as the business rules change. Ideally, we'd like someone else to do most of the generalizeable knowledge modeling just as we presume, when we buy our HRM software, that someone else has captured the basics of overtime pay calculations and EEO reporting.

How far off is the reality of self-service with embedded intelligence? It's here today, if we're willing to start with the easier levels and move gradually. And we must get started on this as quickly as possible before self-service without intelligence overwhelms our call centers, angers our "customers," and creates an absolute muddle of unintentional transaction outcomes. When I discover, during a medical emergency, that my HMO doesn't provide coverage to my

new home address, self-service just became no service. And dissatisfied customers — employees, position seekers, managers, etc. — vote with their feet.

## RECOMMENDED READING

Watkins, Paul R. and Lance B. Eliot (eds.), *Expert Systems in Business and Finance*. John Wiley & Sons, 1993.

Ross, Ronald G., *The Business Rule Book*. Database Research Group, Inc., 1994.

Hartman, Amir and John Sifonis, *Net Ready*. McGraw-Hill, 2000.

Davis, Stan and Christopher Meyer, *Blur*. Perseus Books, 1998.

Kaye, M.M., *Enchanted Evening: The Autobiography of M. M. Kaye*. St. Martins Press, 2000.

Sayers, Dorothy L., and Jill Paton Walsh, *Thrones, Dominations*. St. Martins Press, 1998.

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