**The Case of the Soft Software Proposal**

By: Thomas H. Davenport, senior research associate at the Harvard Business School

***Why should Middleton fund an IS project with "intangible" benefits?***

***But what if it doesn't?***

            Middleton Mutual is a large insurance company head-quartered in Philadelphia. Its chief information officer, Dennis Devereaux, and vice president of information systems planning, Max Vargo, are about to request $1 million to develop an expert system for Linda Peterson's property and casualty (P & C) underwriting department. They've discussed the expert system with President Bill Hayes, CFO Hal Atkins, and other members of the capital expense committee and until now have felt confident it would be approved. But according to the messages in the company's electronic mailbox, the project seems less certain.

**Welcome to Middleton E-mail.**

**You have 1 new message.**

To: **Ddeveraux, CIO**

From: **Mvargo, VP, IS planning**

            Finished the paperwork for expert systems underwriting program. Expected benefits are soft - intangibles like more consistent underwriting and faster turnaround - but compelling. Absent any big changes, we can get it to Capital Expense Committee for next week's meeting. Are you checking with Bill Hayes? I'll check if you want.

**Welcome to Middleton E-mail.**

**You have 1 new message.**

To: **WHayes, president**

From: **Ddevereaux, CIO**

            Just wanted to confirm that we will be submitting our expert systems proposal to the CEC next week. We've pinned down the figures, and they're well within the $1 million we budgeted. We've selected a shell program from a first-rate vendor and lined up a top-notch knowledge engineering consultant who specializes in insurance applications. Two of our most experienced underwriters and eight programmers from my department will work closely with the consultant. We're excited about this program and are anxious to get started.

**Welcome to Middleton E-mail.**

**You have 1 new message.**

To: **Ddevereaux, CIO**

From: **WHayes, president**

            Sorry I haven't had a chance to get to you sooner. Given last quarter's results, we're not in a position to approve any projects that don't pay for themselves almost immediately. Be sure your justification form shows concrete and immediate financial benefits. Promises of "better service" won't cut it.

**Welcome to Middleton E-mail.**

**You have 1 new message.**

To: **WHayes, president**

From: **DDevereaux, CIO**

            Bill, this isn't like replacing 50 people, with a computer in the back office. How can you quantify staying in business? I thought we agreed this was the first step to get Middleton on a level IS playing field. You remember the progression: first, the expert system for multiperil, then we take it to commercial auto and workers' comp. Next we'll upgrade the mainframes and connect our databases and other systems with the expert systems. When we’re all connected, we'll be ready for our ultimate goal of letting agents analyze nsk and quote policies on the spot. If we delay, we’ll be left in the dust. I've seen it in other companies - you try to save a few dollars, and you wind up broke.

**Welcome to Middleton E-mail.**

**You have 1 new message.**

To: **DDevereaux, CIO**

From: **WHayes, president**

            I’d like to see you do the project, but we need to know what the payoff is. Everything should have a number attached. If expert systems are more efficient, the committee will want to know how much more efficient. I'm just cautioning you to be straightforward about the financial implications.

**Welcome to Middleton E-mail.**

**You have 1 new message.**

To: **HAtkins, CFO**

From: **WHayes, president**

            Any more thoughts on the expert systems project? Dennis may not be able to document concrete savings, but I keep looking over my shoulder at companies that are getting into this artificial intelligence business - Cigna, Travelers, USAA, Fireman's Fund. I heard about an expert system that analyzed an application and said to write it at substandard when the company's best underwriter had decided it was standard. They re-examined the case and found out the underwriter was wrong.

**Welcome to Middleton E-mail.**

**You have 1 new message.**

To: **WHayes, president**

From: **HAtkins, CFO**

            I think we should stand firm on this unless we see convincing numbers. It looks to me like another black hole we'll keep throwing money into. We can't afford any more runaway technology projects. Devereaux says he wants to get us into laptops, but he doesn't have any idea whether that's going to cut our administrative costs or underwriting losses or what. He's got a technology solution looking for a problem. If he can prove there are direct productivity benefits, he’ll have my support. But we're getting hit from all sides - taxes, interest rates, soft prices. I'm worried about next quarter. And the quarter after that.

**Welcome to Middleton E-mail.**

**You have 1 new message.**

To**: LPeterson, VP, P&C**

From: **DDevereaux, CIO**

            Some members of the CEC, including Bill Hayes, and leaning against the expert system project. I know I've got your support on this, but I'd appreciate it if you'd let Bill and Hal know that you're behind the project. They don't seem to realize that this application has very real benefits for your department.

**Welcome to Middleton E-mail.**

**You have 1 new message.**

To: **DDevereaux, CIO**

From: **LPeterson, VP, P&C**

            Sorry to hear the committee is going against your proposal, but I don’t think I can say anything to change the outcome. Bill and Hal are running things by the numbers. Roger Lerch, my best underwriter, is retiring in six months, and Lucy Townsend and Henry Ballard are going next year. That kind of experience is hard to replace. But let’s not worry too much about it. I can get something started under my budget - which is how things usually work around here. If I didn’t use the back door, I’d have an abacus on my desk. Besides, my people will accept it better if we take the lead. Right now, the underwriters say there's too much judgment involved for expert systems to do their job. They have to get used to the idea.

**Welcome to Middleton E-mail.**

**You have 1 new message.**

To: **LPeterson, VP, P&C**

From: **DDevereaux, CIO**

            I haven't given up on the project, and I've budgeted for it. It's just a matter of convincing Hal and Bill that it's worth the money. A word from you would certainly reinforce the idea that there's a real business need.

**Welcome to Middleton E-mail.**

**You have 1 new message.**

To: **MVargo, VP, IS planning**

From: **DDevereaux, CIO**

            This is going to a harder sell than I thought. I'm sure Hal Atkins has talked Bill out of it. Atkins is dead set against technology investments of any kind unless they have immediate financial benefits. Why don’t you put together some fancy slides of the data you got - show how expert systems make fewer mistakes than human experts and how much time it takes to process an application with and without the system. Use some of the material the vendors gave us. And reserve the conference room for Monday afternoon. Meanwhile, I'll decide how to play this - shelve the proposal for now or give Bill and Hal the numbers they want, even if they're half-baked.

**Welcome to Middleton E-mail.**

**You have 1 new message.**

To: **DDevereaux, CIO**

From: **MVargo, VP, IS planning**

Not surprised Atkins is giving this department a hard time. Maybe we should do development in-house. We can promise less trouble with integration and more functionality with a customized system. DP can do the project. We can hire a knowledge engineer to work with programmers who are interested in artificial intelligence rule sets and neural networks - things other companies are afraid of. Should I talk to the guys in DP?

**Welcome to Middleton E-mail.**

**You have 1 new message.**

To: **MVargo, VP, IS planning**

From: **DDevereaux, CIO**

            Let's not reopen the make-buy issue. I'm firm on using a shell. If we produce a functional stand-alone system in months instead of years, we won't get our water turned off. Then we can tackle the integration. Just get the data and sit on this for now. Don't discuss it with anyone in DP, and whatever you do, don’t talk about neural networks or neural computing with anyone outside the department. People might get the wrong idea about what we're trying to do.

**Welcome to Middleton E-mail.**

**You have 1 new message.**

To: **JParker, secretary**

From: **LPeterson, VP, P&C**

            Joan, let me know how much is left in our budget for office supplies and furniture. Also, get me a list of our approved software vendors. And set up a meeting with Roger Lerch and Lucy Townsend. I have a special project for them.

**What Do the Experts Say about the Expert System?**

Three IS executives and one systems consultant analyze Middleton's situation.

**Irma Wyman** *is**vice president of corporate information management for Honeywell, Inc. in Minneapolis, Minnesota.*

**Hayes must decide for himself if the project is important.**

            All the ingredients for a major debacle are present at Middleton. The expert systems proposal is intended to make a fundamental change in the way the company does business, but it is being presented and judged as an information technology project.

            Only the line organizations can justify investing in the expert systems proposal by projecting improvements in their operating performance, and they do not appear to be partners in the proposal. If Atkins accepts Devereaux's "half baked" numbers and approves the project, it is unlikely the returns will be achieved and very unlikely they will be measurable because the line groups that must use the tools and deliver the payoff will have no ownership or commitment.

            If, on the other hand, Atkins thinks he can control investment in information technology tools by not funding this project, he is in for a surprise. The likely scenario is that each underwriting group will undertake a separate covert project to introduce expert systems. Each will be on a different schedule and will use a different vendor. The multiple development efforts and learning - curve experiences will mean wasted time and money. Integrating the various expert system into existing databases and other systems will be problematic, and agents will face chaos rather than a single interface when they are trying to give customers quotes.

            Apparently, senior management has a track record of not leading in the application of information technology. Peterson implies that bootlegging expenditures that have been formally rejected is a way of life at Middleton. Bill Hayes must take the leadership role. He needs to decide for himself whether expert systems are needed to keep his business competitive. The answer to that question will come from his line units, not from the information technology people. If he believes that this project is required for the organization's survival, then he must formalize the vision and sell it to the company as a whole.

            A fascination with information technology tools must not be allowed to overshadow issues of whether the tools can and will be used and how their product will affect the business. No matter how impressive the technology, it will not produce good returns unless the people who must interact with it want to make it work. Peterson is right: the project will not be successful unless the underwriters take the lead. Vargo showing that underwriters make more mistakes than expert systems is not likely to get them on his side!

            If Hayes decides to go ahead with that proposal, he should let the line organizations take the lead while he stays focused on the company-wide framework into which each unit's work will fit. Peterson, clearly ready to have a go at this, should be funded to develop a prototype from which business returns can be predicted. Devereaux's group should be accountable for the broader framework and should have a clearly assigned role in the prototype effort. The project's objectives should be set jointly, so Peterson and Devereaux win or lose together. Meanwhile, Hayes and Atkins must be alert to underground projects that are inconsistent with the overall framework.

            The ultimate goal of agents being able to quote policies "on the spot" should be highlighted and communicated throughout the organization. Otherwise, the impression that this is a ploy to put underwriters out of a job will demotivate precisely those people who are key to the project's success.

**Thomas L. Pettibone** *is vice president, information systems, for New York Life Insurance Company.*

**Find the users who need the technology - and sell, sell, sell.**

            Today's CIO faces a dilemma. Well-structured computer systems are crucial to a company's long term competitiveness. But users want their needs met fast, which often means "quick and dirty" solutions that are the antithesis of the company's long-term architectural strategy. To cope, the CIO must be both visionary and implementer.

            He (or she) must envision the company’s technological architecture three to five years hence and understand in a general way what building blocks must be in place to get there. He must then develop a marketing plan to get users to embrace the necessary technologies. But a CIO won't be in office for long if he pursues architecture at the expense of his users' near-term business requirements. He must also keep users content, even when their needs deviate form the envisioned architecture.

            The best way to proceed is to identify needs and wants in the user community that the new technologies can satisfy. (It is always easier to appeal to those who have a need than to try to force it on those who don't.) If the vision of the future is accurate, the technologies will be of help somewhere in the organization. Then the CIO must sell, sell, sell. If he can persuade profit-center heads that the technologies will help them accomplish their objectives, they will carry the banner and sell the technology to others. The CIO must also sell senior management on the need to clean up the quick and dirty solutions to bring them in line with the long-range architectural plan.

            Dennis Devereaux is smart to recognize the need for artificial intelligence. This is a technology the company cannot afford to ignore. But he is not a businessman. Devereaux has not developed a constituency of peers to help "pull" AI technology into the culture. He is trying to ramrod the technology on its own merits rather than getting users to embrace it. He should have worked with Peterson, who is his real customer, sooner. She has the business need that can help Devereaux pull AI in.

            Devereaux has low credibility with senior management. Apparently, he has tried to ramrod projects like this before. His desire to prepare a presentation with "half baked" numbers in the face of sure rejection underscores his credibility problem. He confronts Hayes in an almost hostile way and doesn't acknowledge the company's financial difficulty, which is the most pressing problem. Clearly, the technology issue has jumped in front of the business requirements.

            Devereaux also exhibits poor leadership qualities. Vargo is aware of the political problems this project involves. Rather than taking a prudent course, Devereaux forges ahead, risking everything. His subordinates must be dismayed.

            It's not too late for Devereaux. He should align forces with Peterson and help her bootleg a small version of the project. That way, he can provide technical details that are consistent with his long-term architectural goals. He should stop trying to sell the president and the CFO on "intangibles" and let a small-scale project produce some hard benefits.

**John D. Loewenberg** *is senior vice president, corporate information systems, at Aetna Life & Casualty in Hartford, Connecticut.*

**Don't let IS hide behind "intangible" benefits.**

            The dialogue in the electronic mail messages lacks one fundamental element: a clear understanding of the organization's business strategy and overall direction. Almost all IS initiatives should support the organization's business strategies and plans. Without knowing the company's direction, IS executives have a difficult time identifying and aligning with the business's most important needs.

            Middleton's IS organization seems to have a technology solution looking for a problem. While the solution may have had benefits in other environments, the benefits have not been quantified here.

            Past IS projects could often be justified through direct people replacements. This is not the case today. As a result, the IS community sometimes hides behind benefits that are "soft" and "intangible". IS managers need to become better at building partnerships with their users and looking at the business from the user's point of view. In the process, they will discover that they can in fact quantify many of the seemingly soft and intangible benefits.

            No one at Middleton has taken the initiative to understand underwriting business needs and to quantify the potential revenue increases and savings. The ability to underwrite faster, with fewer errors and more consistent application of underwriting rules, can lead to faster delivery to agents. Agents may become more loyal and place more business with the company - which in turn increases revenues. Also, the ability to underwrite faster means the company might get business it would otherwise have missed, which also boosts revenues. The expert system can ensure that the company's policy rates reflects the true risks. That improves profitability.

            Expert systems can have a tremendous impact on how the organization is positioned for the future. They can spread the underwriting knowledge of one or two experts to the entire organization and perform some 80% of the underwriting activity automatically. Especially if the labor base compresses - as it is expected to - in the 1990s and underwriting departments are short staffed, expert systems will be important for ensuring that the company consistently follows its own underwriting rules.

            Hal Atkins is really not opposed to the idea of expert systems. He just has not yet received enough facts about how the project could effect revenue and current and future expenses. The concern about the near-term expense could be alleviated by capitalizing the project. But Middleton must know that the project makes business sense to begin with.