

Pay As You Go

Utility computing helps insurers reduce costs by paying only for the services they need when they need them.

by Lori Chordas

Not since the advent of such innovative developments as extensible markup language and application service providers has the technology world been as abuzz with speculation as it is about utility computing. The phenomenon, in which companies are billed only for the processing power, software applications and network bandwidth they actually use, is spreading among insurers, attracting some with the convenience and cost savings it provides.

Growth of Utility

While the buzzword is new, the concept of utility computing emerged several decades ago.

The general idea of computing as a service or utility has been around in various forms for more than 40 years, with such variations as time sharing, computing bureaus, hosting services, centralized mainframes and ASPs, according to an article in *Optimize* magazine.

In addition, the cyclical nature of technology that involved mainframes in the 1970s, minis in the 1980s and distributed computing in the 1990s, led the way to utility computing, said Gates Ouimette, marketing manager for The InterUnity Group, a company that helps businesses improve their business performance through the optimization of IT spending.

Today, major vendors, including IBM, Hewlett Packard, Microsoft, Computer Associates and Sun Microsystems, are aggressively marketing the concept. Each vendor's products and services take a somewhat different approach, however, varying from models dependent more on consolidation and a less heterogeneous network to

those focused on a grid-computing-type approach.

Ouimette believes grid computing, in which power is harnessed for many computers on a network to solve problems requiring different processing cycles and involving large amounts of data, was the precursor to utility computing. Through grid computing, applications are conceptually "decomposed," distributed and run on different computers in different environments, whether internally or externally. "Once companies understood this approach, they quickly realized that this approach could form the basis of utility, or on-demand, computing," Ouimette said. Beyond the provisioning of available desktop central processing unit cycles, utility computing would allow the provisioning of data centers, networks, computers, storage, applications and data on a "when-needed basis" at a fixed price per unit, he added.

The Big Picture

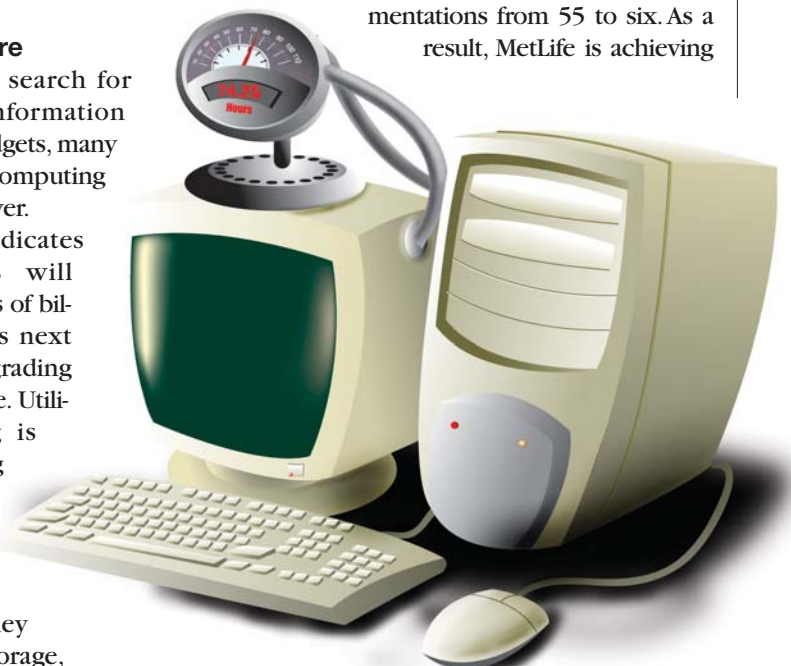
As insurers search for ways to cut information technology budgets, many believe utility computing may be an answer.

Research indicates that insurers will spend hundreds of billions of dollars next decade on upgrading IT infrastructure. Utility computing is already helping some insurers by allowing them to pay only for the services they use, such as storage,

network bandwidth, central processing units and servers. The benefit? Insurers are finding utility-based pricing models better match IT expenses to revenues, not only reducing costs but increasing speed of delivery. And because costs are fairly predictable, determining return on investment and budget planning are easier.

Some industry experts estimate that companies can save up to 50% of IT costs by using a pay-per-use consumption model. In addition, cost savings generated from making use of processing and storage power by companies' servers that may otherwise be sitting idle is another value add.

This is the case for New York City-based MetLife, which recently implemented a data utility-based model for both new and upgraded applications. As an example, utility computing allowed the company to reduce the number of servers required for two recent implementations from 55 to six. As a result, MetLife is achieving



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anywhere from a 6-to-1 to 14-to-1 leverage factor with the utility servers over stand-alone servers, said Steve Sheinheit, senior vice president and chief technology officer. "Not only is utility computing allowing us to reduce our purchases of new servers, it's also enabling us to consolidate the existing server plant and move to a shared-server environment."

In addition to lowering costs and increasing speed, the utility approach

adds commitment to standardization and creates higher dependability and reliability. Sheinheit believes models must meet several criteria to ensure they're truly a utility-based approach, however. "Utility models must be shareable and be standards based, support common or general needs, be built to handle capacity fluctuations or peak demands, exhibit economy of scale and be dependable," he said. MetLife began its internal utility con-

cept three years ago with its middleware to connect legacy systems and new technologies, and it's now concentrating efforts around data and application server technology.

While some experts equate utility computing to outsourcing or an ASP model, others say it's much more. In fact, some industry experts view utility computing as offering greater value than ASPs because companies are able to take advantage of shared

The Ways to Pay

While the concept goes by various names, including utility computing and on demand, the idea remains the same: users pay only for services—such as network bandwidth, data storage, computing processing and software applications—they actually use.

According to an article in *The IT Journal*, "Utility Computing: Determining When the Price is Right" by Martin Probst, utility computing generally falls into one of three models—pay per actual usage, capacity on demand or pay per forecasted usage.

Under the pay-per-actual-usage model, users are charged a fixed or minimum cost and a price component depending on monthly usage. The capacity-on-demand model takes a somewhat similar approach in that the delivered system provides more capacity than actually paid for during initial deployment. The least used model by insurers is the pay-per-forecasted usage, in which the client structures payments according to predefined business or IT metrics.

Utility-based models used by most insurers are a combination of the pay-per-actual usage and capacity-on-demand models. "For us, it's a combination of multiple models depending on the service we're selling, determined upon your contract with a particular business unit," said Mark Popolano, chief information officer of American International Group. While many developers want a utility model on demand, businesses prefer usage for business applications. "One model doesn't fit all, but rather you have to apply it appropriately." AIG uses utility computing for such services as blade servers, thin electronic circuit boards that contain multiple microprocessors and memory used for a single application, and various rack-mounted hardware.

Earlier this year, MetLife implemented a data utility-based model for both new and upgraded applications. In addition, three years ago it used an internal utility concept for its middleware to connect legacy systems and new technologies. "A highly reliable, shared infrastructure with capacity on demand is the goal for these utility-based models," said Steve Sheinheit, senior vice president and chief technology officer. "This helps us plan long term and to

more efficiently allocate capacity while allowing us to have spare capacity in place."

Sheinheit pointed out, however, that the utility-based model is not new but rather has been used in the mainframe environment for many years. "The mainframe environment is mature and predictable, enabling us to forecast usage and charge accordingly," he said.

AIG Technologies, a managed services outsourcing and insurance technology solutions provider to both AIG and outside companies, relies on all three models, with a greater emphasis on the pay-per-actual usage. "Prior to offering a quote, we do a very thorough analysis of what a client is doing with their machines and what we're planning to do with them, such as whether we think capacity will increase or decrease, in order to plan the asset," said Paul Madarasz, president. The company then typically builds in the price of actual usage based upon a historical amount of capacity used, which is then modeled to provide a planned growth or decreased path. "Clients can continue to grow at a flat price point or they can decrease at a planned price point, but the variable is always what happens in the actual practice, given that you pay for actual usage at the end of the day." AIG Technologies also looks at the type of capacity and a client's forecasted growth.

Gates Ouimette, marketing manager for The InterUnity Group, a company that helps businesses improve their business performance through the optimization of information technology spending, believes that the pay-per-forecasted-usage model is plagued with downsides. As an example, he referenced one insurer's experience with attempting to forecast infrastructure and technology needs five years in advance. After building a new data center, however, the company realized its actual needs far surpassed its forecasted projections. "They were then forced to decide how to consolidate hardware and applications or whether to build more physical space," Ouimette said. The company changed its focus and eventually moved to a more on-demand approach and a flexible architecture that will allow them to add or delete products and services as needed in the future.



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*—Gates Ouimette,
The InterUnity Group*

infrastructure resources as opposed to simply outsourcing individual applications. On the other hand, Ouimette believes ASPs, which he says were thought to be “dying a slow death,” are actually reincarnating as a utility computing component. “Initially, ASPs were independent third parties who hosted applications. The challenge in this approach was not only in defining the security of the data being used by the applications but also in how to integrate multiple applications, such as sales force automation and enterprise resource planning,” he said.

With utility computing, firms can buy just the amount of infrastructure they need, when they need it, to run ASP-delivered applications. In the near future, standard integration practice could include integrating multiple ASPs with “just-in-time” infrastructure as a single utility-based offering, Ouimette added. “Users will be able to rent an application and the requisite infrastructure, and use it for a certain amount of time and be charged only for their usage.”

First-Hand Experience

Utility computing is beginning to pay off in a big way, both from insurers’ use of utility-based models and from their sales of services.

Columbus, Ohio-based Nationwide began offering services as utilities during the past year, including application services, such as authenticating users and transferring identities of multiple users and business partners coming into Nationwide’s various companies. “An application needs infrastructure to provide cross-company authentication in a shareable utility among the company, and we’re sharing that,” said Srinivas Koushik, chief technology officer.

Clients pay for services based on their needs and projected volume.

“In a sense, we’re trying to get to a stage where we can use computing resources as if we’re using other utilities like electricity or gas to plug into a wall outlet and get that type of service and be billed for what we are using,” said Koushik.

Nationwide is now taking a similar approach for its content management to maintain flow of content through different stages of development, in addition to getting information onto a Web site. The company is also working on putting business-to-business work flow integration in place on a utility-based approach. “The transformation allows us to transfer one format to another and ship services to other companies,” said Koushik.

AIG Technologies is using utility computing to offer such services as technology upgrades, account executive support and migration support, all of which are offered in a bundled price. “We felt it was important to provide a pricing structure to allow users to pay for what they use, so they don’t have to go out and acquire a box and buy 30% to 40% more capacity than they actually need,” said President Paul Madarasz. He said this is a reflective model for companies getting off mainframes or growing work flow. “And anytime there’s a change in the business dynamic, it’s a great time to consider a utility model.”

Since its inception, Madarasz has seen a number of benefits achieved from the company’s utility computing model. “Clients don’t have to worry about planning and sizing their infrastructure, there are no extra charges and they receive a full-function offering based upon use.” In addition, it’s also adding dollars to the company’s bottom

line. “The more scale a company can get to run a big utility, the better the price points are for everyone involved.”

While utility computing is beginning to make its way into the insurance space, some insurers aren’t yet sold on the concept. UnumProvident believes utility computing can help companies to lower costs, although the Chattanooga-based company also believes the operating flexibility of utility computing remains a challenge, said Linnea Olsen, a company spokesperson. In addition, UnumProvident believes companies are highly dependent on vendors and are required to lock into long-term agreements with them, which it says may not be worth the savings and end up costing more money in the long run, she said. While it recognizes that vendors are taking a serious approach to the concept and investing big dollars into utility computing, Unum doesn’t want to be an early adopter of its use.

On Demand

IBM is playing a major role in bringing the utility concept to light.

IBM recently invested \$10 billion on its “e-Business On-Demand Computing” initiative, including a \$4 billion contract with American Express to provide all of its technology infrastructure as a utility, which is managed and maintained by IBM. American Express anticipates it will save hundreds of millions of dollars during its seven-year contract.

While e-Business On-Demand is a major business initiative, utility computing is just one part of the model. Through a grid computing approach, users are able to get various infrastructure capabilities, such as storage or databases, on an on-demand basis across the grid. Benefits to insurers include significant economies of scope and scale, reduced cost of capital, expense reduction from 10% to more than 20%, and new product and service offerings.

“E-Business On-Demand is a fundamentally new way for insurers to operate their enterprise by virtualizing it and breaking down silos that exist between various areas of the value chain—like underwriting, claims or

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policy administration,” said Bill Pieroni, general manager of IBM’s global insurance industry.

“When customers transform processes, such as purchasing MIPS—million instructions per second—storage or network bandwidth, from a step function to a variable cost basis—in other words, paying only for what they use and receiving the capacity at the moment of value when needed—that’s where grid or utility computing really can play a role,” said Pieroni. Because insurers, on average, operate far less than 50% of servers at any given time, utility computing helps remove the expense generated from the idle time, in addition to resolving the volatility associated with capital costs because companies no longer need to own those assets, he added. Beyond the initial IT savings, significant potential exists to reinvest into new IT systems that yield cost reductions directly in insurance business areas. Examples include reducing loss costs instead of just loss adjustment expenses or running marketing campaigns that are more effective.

Several insurers are finding value from IBM’s On-Demand approach. For example, Norwich Union is using



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gren, marketing manager of telematics for the United Kingdom-based company. IBM is providing the telematic architecture, hardware and software, and device specifications to support the initiative.

American Transit Insurance Co., which writes livery in New York, is taking a somewhat similar approach. In its pilot program, the company has installed crash boxes using global positioning system technology into New York City medallion taxis and other livery vehicles to study driving patterns. Premium rates will undoubtedly be influenced by this information, which should help reduce costs for both drivers and the company, said Ralph Bisceglia, director. “Ultimately, safety is the issue, and even if we can get a 10% reduction through a sentinel effect, it will be worth it for everyone.”

core set of applications that are going to make money and create more value for their business.”

Looking Ahead

Widespread adoption, however, may take some time. “I don’t think it will be a straight path because of the cyclical nature of technology adoption,” said InterUnity’s Ouimette. He believes, however, that as companies realize they can use infrastructure and application technology and business processes less expensively via a pay-per-usage basis, they will begin to see its value. “However, vendor pricing, model changes and unforeseen events can significantly slow adoption rates. These factors, added to the complexity of understanding utility computing implementation concepts, not necessarily the complexity of the implementations themselves, can add a few years to adoption time frames.”

According to a survey by the analyst group IDC, the majority of the 34 major U.S. enterprises surveyed were skeptical about the utility computing notion. IDC concluded that it will be at least 2008 before spending on the new service model rises significantly.

IBM sees mixed reactions by insurers to a utility-based approach. “There are three groups—one that’s extremely enthusiastic and embracing the concept and trying to understand how to leverage it to gain advantage in the market, another group that’s somewhat skeptical, and another group in the middle who’s confused and scared about the concept but continue to step back and think about it,” said Pieroni. He believes it’s not a matter of whether or not users will be ready for the concept, but rather when they will be ready. **BR**



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the model for its “Pay as You Drive” insurance program pilot for 5,000 volunteer motorists in the United Kingdom and Europe. Through the use of IBM telematic devices installed into cars, Norwich Union is able to measure insureds’ driving patterns to help calculate premiums based on when, where and how often the car is used. “This allows us greater fairness in premiums tailored to individuals, in addition to providing them an element of control and increased safety and security,” said Douglas Vall-

Promising Future?

Many believe utility computing will continue to grow. “I think it’s a model a lot of companies are now moving to and should actively consider,” said Madarasz of AIG Technologies, “Especially as they realize that infrastructure to run their applications is a commodity, they’ll realize that investing time and dollars in that commodity will not allow them the time and energy to do other things such as looking at ways to grow the business, shorten development cycles, or focus on a

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