



# **Towards the Computerless Office**

## **New Options for the Small-to-Medium-Sized Business**

a StollerStrategies Whitepaper

**Commissioned by  
Quartet Service Inc.**

## Rethinking Office Computing

*The latest developments in technology are changing the way computing is delivered. Businesses now have the option of using popular applications without having to buy computers.*

If a company threw away all their computers and fired their IT staff, one would suspect that they were going out of business. However, this might not be the case at all. Granted, few offices can function today without IT. But new delivery models will allow companies to utilize IT technology without acquiring and supporting servers, desktop computers, software, routers, or storage and backup devices. This model is called utility computing.

The utility approach gives businesses the convenience of buying computing services, such as word-processing or email, on an as-needed basis, the same way they buy electricity. Leading-edge as it sounds, utility computing has been evolving over the past decade, and IBM and other global IT giants have already invested billions in making it successful. As a result, it is possible and economical for many businesses to buy all of their computing from a utility, equipping their offices with only simple user devices and printers.

Quartet Service Inc. has created a new facility in downtown Toronto which allows businesses to convert all or part of their IT operations to the utility model. This whitepaper discusses how utility computing works, how it helps businesses focus on their core goals, and how companies can transition to utility computing in a practical and cost-effective manner.

### Computing as a Service

*Buying computing from a utility is not as simple as buying voicemail, but it is not as far off as most people would expect.*

People don't buy answering machines the way they used to, but not because of a lack of phone messages being left. The telecom industry has made it so easy to buy voicemail that nobody wants to buy those awkward devices anymore. Many analysts believe that businesses, in a similar fashion, will soon use utility computing services to reduce or even eliminate their dependence on company-owned computer hardware and software.

In a computerless office, a typical office worker will require a suite of services such as word-processing, spreadsheeting, email, internet, file storage, backup, print management, and help desk. As well, the company might subscribe to corporate services, such as SPAM filtering, encryption of data, or reporting on email patterns.

All these services are available today. As a result, the computerless office, where workers are equipped with little more than screens, keyboards, and printers, is a practical option. Most

businesses won't make the transition overnight, but recent developments have made an incremental transition both practical and financially viable.

### A New Way of Buying Computing

*Utility computing allows businesses to think of technology in the only context that really counts; how it can help them better meet their business goals.*

The traditional user-operated computing model forces companies to deal with technology issues that have nothing to do with their business. Utility computing allows businesses to think of technology in the only context that really counts; how it can help them better meet their business goals. The following table compares utility computing with the traditional user-operated model:

**Table 1: Delivery Model Comparison**

|                       | <b>User-Operated Computing</b>  | <b>Utility Computing</b>  |
|-----------------------|---|---|
| <b>Requirements</b>   | Emphasis on technical specs such as CPU power, bandwidth, and disk space                    | Emphasis on performance, user satisfaction, matching service to business needs.   |
| <b>Accountability</b> | Customer responsible for selecting, implementing, and supporting the technology.            | Utility accountable for all technology, delivers service as required by business. |
| <b>Investment</b>     | Investment in technology required, with the associated risks and amortization requirements. | No capital investment. Services purchased on an as-needed basis.                  |
| <b>Staffing</b>       | Company retains expertise in the operation of technology.                                   | Expertise is retained by utility.   |

### Business Advantages of Utility Computing

Utility computing offers companies the benefits of technology without the responsibility. This will allow businesses to achieve the following advantages:

- **Avoidance of distraction from core business.** Utility computing allows customers to forget about issues such as IT staffing, implementation, ongoing support, licensing, and security.
- **More flexibility in use of technology.** Utility computing allows companies to use the “latest and greatest” without long planning and implementation cycles, and to make rapid changes as business conditions dictate.

- **Predictable costs.** Customers pay a simple monthly fee, eliminating the mysteries associated with technology expenses.
- **Prevention of risk.** Utilities allow companies to avoid the many risks associated with operating an IT infrastructure, such as personnel shortages, software bugs, and hardware failure.
- **More efficient use of capital.** Companies can free up their capital for investments that are better suited for growing their business.
- **Lower overall cost.** Utility computing providers have economy of scale on their side, and can often provide a better product for less money.

## Success Factors for Delivering Utility Computing

*Utility computing requires delivery organizations with strengths in network connectivity, end-user support, and security.*

In order for utility computing to be accepted by users, the utility needs to be able to deliver “local-like” quality of service. In other words, a user sitting at a desktop should not be able to tell the difference between utility and local. In order to accomplish this level of transparency, the utility needs to be able to deliver high levels of network connectivity, support, and security. These success factors are detailed below.

### Network Connectivity between Utility and Customer

The remote hosting of applications has a long history, and has been supported by a variety of methods. Application Service Providers have used dial-up lines, leased telecom lines, and Virtual Private Networks (VPN’s) over the internet to connect users to the remote application. All of these have had shortcomings in terms of providing the “local-like” feel, and these have inhibited the growth of the ASP sector.

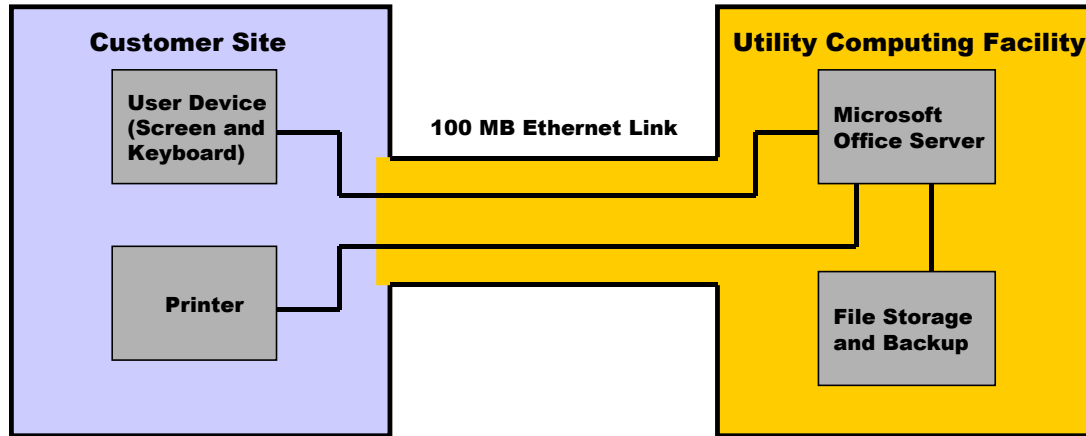
The introduction of Metro Area Networks (MAN’s) to downtown cores of major North American urban centres has made utility computing much more viable. These networks allow the creation of a true 100MB ethernet connection between the customer location and the computing utility. With this kind of bandwidth, the user experiences the same performance as in a locally hosted facility.

*The introduction of Metro Area Networks (MAN’s) has made utility computing much more viable.*

With the customer site and the utility in the same virtual proximity, there can be complete flexibility in location of devices. From a network perspective, it makes no difference whether a server is located at the customer site or at the utility, or whether it is managed remotely or locally. This not only gives users the confidence and comfort they need to work with a remote facility,

but allows device location, and choice of who manages the device, to be completely determined by business considerations.

**Figure 1 – Simple Network Example**



*In this example, an employee at the customer site is using a utility-based word-processing service. The user accesses Microsoft Word with a simple client device, and is licensed through the utility to use the application. All computing is handled by the utility, including file storage and backup, and the sending of the file to a printer located at the customer site.*

This flexibility can be exploited in a wide variety of ways. It will enable many more companies to employ the right mix of customer-owned and utility computing, and to make the transition in a practical manner.

### **End-User Support Capabilities**

*Utility computing requires a strong support organization that will give users the confidence they get from in-house service.*

A key ingredient of “local-like” service is “local-like” support. This requires a support organization with a track record in supporting small-to-medium-sized office environments. It also involves having sufficient range to be able to function as a “one stop shop” for the many organizations that don’t have the resources to manage multiple vendors. The attributes of successful organizations are as follows:

- **End-User Help Desk.** A help desk staffed for supporting end users directly, as opposed to requiring a designated contact in the customer’s IT department.
- **Broad Range of Expertise.** A wide enough range of expertise to handle virtually all the technology issues that come up in a small office. This includes desktop applications, operating systems, storage and backup, networking, security, internet, and e-mail.

- **On-Site Coverage.** Sufficient staff to assume the on-site role for clients with no IT expertise.
- **Remote Monitoring and Management.** The tools and expertise to manage the environment efficiently and proactively.
- **24 / 7 Support.** The ability to receive and respond to after-hours calls.
- **Training Capabilities.** The ability to make clients more independent through formal training and knowledge transfer.
- **Implementation Resources.** Sufficient staff to support moves, network changes, new application rollouts, and other common projects.
- **Planning and Consulting.** Senior technical staff who can provide objective CIO-level advisory support on long-range technology issues.

None of the capabilities in this list are new to the industry; the key is the ability to incorporate all of them into cost-effective service plans that meet customers' unique business needs. A service organization with this combination in place is well positioned to provide the level of "local-like" service that is required for a seamless transition to utility computing.

## Security Infrastructure and Resources

*Computing utilities are in a position to take much stronger security measures than the typical user organization could afford.*

Many people are, understandably, reluctant to put their business-critical data in the care of an outsourcer. However, statistics show that most cyber crime is directed towards easy targets. As a result, organizations who don't have the resources or the know-how to put proper security measures in place are most frequently hit. Utilities like Quartet Services are able to implement a much higher level of security than the typical small-to-medium enterprise can afford, thus improving their resistance to attack. This safety net includes:

- **Enterprise-Grade Firewall.** Firewalls are frequently breached, and the only defense is constant updating to address the latest threats.
- **Virus Protection.** Protecting against viruses is an ongoing battle that requires constant vigilance.
- **SPAM Protection.** Keeping SPAM under control is a high-maintenance process requiring sophisticated tools and lists.
- **Monitoring Capabilities.** The ability to monitor external and internal threats, such as employee activity, may be a critical component of a security plan.
- **Server Hardening.** Management of patches to ensure up to date security protection is critical.

- **Segregation of Data.** Utilities need powerful data segregation capabilities to keep customer data from getting into the wrong hands.
- **Single Internet Access Point.** The utility can prevent security threats by eliminating multiple points of entry.
- **Secure Backup.** Professionally controlled backup removes one of the major security threats experienced by smaller organizations.
- **Intrusion Detection.** Too costly for many organizations, intrusion detection allows security personnel to review suspicious events after the fact to prevent perimeter leaks.
- **Security Documentation.** A detailed, documented security plan, which can be revised for a customer's own PIPEDA compliance submission.

## Making the Transition to Utility Computing

### Preserving Choice – The Key to Accessibility

Small to medium businesses find that their business needs are unique, and they don't like to be put in boxes. Few companies will buy into a "one-size-fits-all" computing model. The Quartet offering gives the customer a wide range of choice, including:

*No two businesses are exactly alike when it comes to use of technology, and a "one size fits all" computing model doesn't exist.*

- A selection of commonly-used applications such as Microsoft Office.
- The flexibility to have some but not all employees subscribe to the utility.
- The freedom to use the utility for specific applications and/or services.
- The ability to use existing PC's, passive client devices, or both.
- The freedom to locate and / or manage any device at either the customer site or the utility. This includes specialty applications servers, storage and backup devices, and printers.
- The capability of sharing network management and other operational tools between customer and utility sites.

By preserving choice, Quartet's capabilities allow companies to make the transition to utility computing as business conditions dictate.

## Timing is Everything: Making the Transition Good for Business

*Businesses regularly face situations where a transition to utility computing results in immediate financial benefits.*

Making an overnight change to utility computing is not in the cards for most companies; there is a need to maximize the value of existing investments as well as consider the future. No company is going to throw out equipment purchased a month ago. A flexible utility that allows a wide range of choice will allow companies to make changes when the timing is right for their business. A good time to consider utility computing might be when a company is confronted with:

- The need to update from a legacy email system to Microsoft Exchange.
- A large inventory of older machines running Windows '98.
- Low satisfaction with existing IT.
- The need to quickly absorb a number of new users due to an acquisition.
- The need to reduce IT headcount in order to cut costs.
- A volatile business environment where particulars regarding IT users are hard to predict.
- A situation where IT support and other costs appear to be escalating out of control.
- A move into a new facility.
- Migration of a specialty application from Unix to Windows.
- A possible transition to Linux.
- The need to standardize on Microsoft Office.

## Business Case Scenarios

*Utility computing can be justified in many situations by hard measurable cost reductions.*

The scenarios below are based on situations faced by two Toronto businesses. Each scenario compares the cost of a conventional IT solution with the quoted price for the utility equivalent, provided by Quartet Service Inc. The analysis has been limited to hard, measurable costs. Intangible cost savings, if measurable, would make these business cases even more compelling. All figures are in Canadian dollars.

## Scenario A – Email Upgrade

**Business Scenario:** A downtown professional firm with 375 desktops needs to convert a legacy email system to Microsoft Exchange in order to be compatible with business partners. The transition involves high capital costs, which are partially due to the difficulties of making a seamless changeover.

### Conventional Solution

A conventional solution involves the purchase and ongoing support of Microsoft Exchange and related software at the server level, as well as copies of client software. In addition, considerable storage is required for ongoing needs, and to provide redundancy for the changeover. The estimated costs for a 3-year period are as follows:

| Category   | Description   | Cost             |
|--|---|------------------|
| Hardware   | Redundant servers, 300GB redundant storage, SAN, network upgrades     | \$170,000        |
| Software   | Server and client licenses for Exchange, Outlook, Windows 2003 Server | \$130,000        |
| Implementation, security consulting                  | Services to plan, install, train.                                     | \$140,000        |
| Personnel  | Administrator @ 2/3 FTE, 3 yr cost                                    | \$120,000        |
| <b>TOTAL</b>   |   | <b>\$560,000</b> |
| <b>Monthly Cost / Based on 36 Month Amortization</b> |   | <b>\$41.50</b>   |

### Utility Computing Solution

Quartet Service has the infrastructure and support organization already in place to support Microsoft Exchange. Therefore, many of the implementation costs are amortized over a number of customers. The equivalent service offering includes:

- Managed exchange service.
- Outlook clients included.
- Redundant storage at 2 locations.
- Administrative support.
- Latest upgrades and patches included.
- 24 / 7 support.
- SPAM and virus protection
- Enterprise level security
- Management reporting.

| Description   | Cost             |
|---|------------------|
| Initial setup for 375 users, including licenses, implementation of dedicated infrastructure, testing, training, and documentation | \$60,000         |
| 3-year support cost based on 375 users @ \$32./ month X 36 months.  | \$432,000        |
| <b>TOTAL</b>  | <b>\$492,000</b> |
| <b>Monthly Cost / User Based on 36 Month Amortization</b>   | <b>\$36.50</b>   |

**Observations:** This company can save a projected **\$68,000** over a 3-year period by selecting the utility option. While the actual savings will vary according to customer situation, the comparison shows how viable the utility option is for companies who need to migrate to Microsoft exchange. With a very low risk, the company can make the transition with a minimum of distractions. Because the Quartet facility is up and running, training and implementation could be scheduled in a manner much less disruptive to the business.

## Scenario B – Windows Upgrade

**Business Scenario:** A downtown real estate firm is using outdated desktop machines running Windows '98, and needs to upgrade to XP. All implementation and training is done by an outside independent contractor.

### Conventional Solution

Like many small offices, this firm uses an independent contractor for implementation and ongoing support. Their conventional solution involves buying computers and software from an office supply retailer.

| Category  | Description                                   | Cost            |
|---|---|-----------------|
| Hardware  | 16 new desktops with XP installed             | \$32,000        |
| Software Application Costs                                | Microsoft Office, 16 Clients @ \$200 / Yr X 3 | \$9,600         |
| Internet Access   | \$75 / mnth X 36                              | \$2,700         |
| Support Services  | Purchased from outside firm @ \$5000 / Yr X 3 | \$15,000        |
| <b>TOTAL</b>  |   | <b>\$59,300</b> |
| <b>Monthly Cost / User Based on 36 Month Amortization</b> |   | <b>\$103</b>    |

### Equivalent Utility Service

Quartet Service can provide the same software platform for the cost indicated below. The suite of services suitable for this firm includes the following:

- Hosted Microsoft Office
- Client Devices Included
- All Upgrades Included
- High Speed Internet Access
- 9 X 5 Help Desk Support
- 100GB Storage

| Description  | Cost     |                 |
|--|----------|-----------------|
| Initial setup for 16 users, including licenses, implementation of dedicated infrastructure, testing, training, and documentation | \$2,600  |                 |
| 3-year support cost based on 16 users @ \$84./ month X 36 months.  | \$48,384 |                 |
| <b>TOTAL</b>   |          | <b>\$50,984</b> |
| <b>Monthly Cost / User Based on 36 Month Amortization</b>  |          | <b>\$88.50</b>  |

**Observations:** This company can save a projected **\$8316** over 3 years by selecting the utility option. Because the office is small, and there is no IT staff, it is likely that there are many hidden costs in unexpected downtime, lost employee productivity due to an “ad hoc” support system, and poorly configured machines. An added benefit would be that the utility could give much better security protection than small offices normally provide with their own resources.

## Conclusion:

*Quartet Service Inc. has the resources in place to make the computerless office affordable and practical for most downtown businesses.*

The availability of ultra high-speed bandwidth in downtown cores, coupled with the commitment of the IT industry to utility computing, has created a unique opportunity for utility service providers who know how to serve the downtown office market. Quartet Services is ideally suited to making this vision viable. With a 6-year track record supporting downtown businesses, and a partnership with leading bandwidth providers, Quartet can provide:

- A selection of industry-standard applications such as Microsoft Office.
- A full range of support services to allow single-source capabilities.
- State-of-the-art security infrastructure.
- Implementation, project management, and consulting capabilities.
- Virtual proximity through 100MB Ethernet connection.
- Remote and local monitoring and management capabilities.
- Voice telephone services.

As a result of these capabilities, downtown offices will not only be able to convert to utility computing, but they will be able to do so incrementally as business conditions dictate. The good news is that the business cases hold for partial as well as total transitions to the new model. Organizations will therefore find many opportunities to eliminate capital costs and realize immediate savings by embracing this exciting model.

### **For More Information Contact:**

**Rob Bracey, President, Quartet Service Inc.**

**416-483-8332, ext 2007**

**[www.quartet-service.com](http://www.quartet-service.com)**