

Cloud Computing Business Scenario Workshop

A Report by:

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Cloud Computing Business Scenario Workshop

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Cloud Computing Business Scenario Workshop

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Executive Summary

The Open Group conference in July 2009 included a workshop whose purpose was to gather input for a Cloud Computing Business Scenario.

The Business Scenario technique of TOGAF™ can be used to gather and represent customer requirements in order for the supply side to better understand real needs of the customer side. The purpose of the Toronto workshop was to gather customer views on the motivations for, and key requirements of, the use of Cloud Computing technologies. It focused on the pain-points that customers experience through not using Cloud Computing.

The workshop was a lively session, conducted by Terry Blevins of Mitre. More than 40 pain-points were identified. They were grouped into nine categories, which were then ranked in priority order, as follows.

- Timeliness/agility
- Resource optimization
- Cost
- Need to remove obstacles to innovation
- Security
- Risk management
- Compliance
- Need to improve quality of IT support
- Business continuity

This valuable input is described in the body of this report. Further input will be needed to complete the Business Scenario. It will be gathered, and the Scenario completed, during the summer of 2009.

Workshop Goals

The stated goals of this workshop were to:

- Discuss the pain-points associated with not having cloud computing, and the implication of them
- Build a consensus around the priorities of the pain-points
- Identify the critical elements of the environment, business, people, and technical – generalize and establish roles for each
- Discuss the objectives of addressing the pain-points – get as specific and tangible as possible

A presentation was given at the start of the workshop to give an overview of the Business Scenario process and set the workshop goals.

Pain-Point Affinity Groups

The following describes the pain-point affinity groupings gathered in the workshop. Each of these pain-point groups was considered as something that could be addressed by cloud computing, provided that the cloud computing solution addressed some general requirements. Each section describes the pain-point, the implications of not addressing this pain, a statement of how cloud computing may alleviate the pain, and requirements for the cloud computing solution. Note that these affinity groups are not mutually-exclusive; they are interrelated.

Timeliness/Agility

Description

The timeliness and agility pain-point is the inability to quickly provide what is needed to ensure a business or mission outcome. It can be further described in terms of inflexibility of global deployment, lack of alignment, lack of insight into existing capabilities that could be brought to bear, lack of interoperability with business or mission partners, lack of flexibility in supporting on-demand composition of business or mission capabilities (bundling).

Implications

Not addressing this area results in high and increasing costs, low levels of responsiveness, loss to competition, and higher levels of unnecessary redundancy.

How Cloud can Help

It is believed that cloud computing can address this pain-point through the following:

- Organizations can focus value-add on business or mission and allow cloud infrastructure to focus on IT security, IT management, IT operations and administration, and IT infrastructure development (incorporation of latest game changing technologies).
- Organizations are freed from the issue of sizing and costing out infrastructure, thereby being able to more quickly deliver capability.
- Organizations can leverage proven cloud business models and arrangements in which business partners have already agreed to engage in a pre-specified way with agreed interchange formats and protocols.
- Organizations are sharing significant IT costs generating lower costs per hour than if in-house.
- Organizations benefit from global deployments through the cloud.

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Cloud Requirements

- Isolation and independence from infrastructure
- Portability
- Elasticity
- Localization
- On-demand local business rules extensibility
- Interoperability
- Transparency of reporting cloud capabilities
- Uniform security and identity management model

Related Raw Pain-Points

- Flexibility of how we bundle services to customers is hampered by current system inflexibility. Different combinations – bundling of products and services.
- Inability to match/align capabilities with needs of the business. Also an issue with knowing what IT capabilities there are that you could possibly take benefit from.
- Ability to evolve the business process – change or evolve – agility of IT in support of the business.
- Lack of seamless access to partners – interoperability between business partners is still difficult and expensive.
- Agility and inflexibility – need to be responsive – traditional development costs a lot of money – cloud could be the expansion provision – cost of failure inhibits experiment. Inability to “take a flyer” on a new approach – cost of failure discourages experimentation/innovation.
- Inability to get point solutions up and running quickly – need quick solutions.
- Lack of geographic flexibility – be able to do the same thing from different geographic locations. Need location-independence and ability to execute business processes from different locations.
- Need rapid access to different, and potentially game changing, models of computing and new technologies. Without this, could be left in the dust by competition.
- Technology refresh – transparent introduction of latest technology.
- Time to market – with cloud you have the security and development given, and can focus on the solution.

Resource Optimization

Description

The resource optimization pain-point is about ensuring that all resources (people, process, information, and technology) are in alignment and positioned to deliver business or mission capabilities effectively and efficiently. In addition to optimizing resources, the dimension of “on-demand” comes into play as the pain of not being able to optimize on-the-fly has negative consequences to the business or mission, especially in operational scenarios (such as customer-facing scenarios). This pain not only comes into play in operational scenarios, but also comes into play when managing the overall environment and when developing improvements to the environment.

Causes of this pain-point come from having too much diversity in the environment, poor alignment of resources, lack of insight into existing capabilities (people, process, information, and technology), lack of localization capability, lack of interoperability, and lack of ability to “dial in” the appropriate service.

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Obviously this pain-point is highly related to the cost pain-point below. Optimization must include cost benefit trade-offs. This pain is particularly problematic when attempting to employ new technologies or addressing new “got to do – table stakes” requirements (such as compliance requirements imposed through laws and regulations).

Implications

Not addressing this pain has significant consequences such as loss of customers, high capital investment and costs, loss of competitiveness, poor support for global deployment, poor IT support organization, and potentially fines for non-compliance with laws and regulations in a timely manner.

How Cloud can Help

It is believed that cloud computing can address this pain-point through the following:

- Organizations can leverage capacity on demand.
- Organizations can leverage proven solutions to compliance requirements issued through laws and regulations.
- Organizations can focus value-add on business or mission and allow cloud infrastructure to focus on IT management, IT operations and administration, and IT infrastructure development (incorporation of latest game changing technologies).
- Organizations are sharing significant IT costs generating lower costs per hour than if in-house.
- Organizations can leverage proven cloud “help desk” business models and arrangements in which business partners have already agreed to engage in a pre-specified way with agreed interchange formats and protocols.
- Organizations benefit from global deployments through the cloud. Sizing of capacity investments, provisioning.

Cloud Requirements

- Well-structured customer-centric SLAs
- Isolation and independence from infrastructure
- Elasticity
- Localization
- On-demand local business rules extensibility
- Interoperability
- Transparency of reporting cloud capabilities
- Well-managed cloud governance
- Uniform security and identity management model

Related Raw Pain-Points

- Sizing of capacity investments, provisioning. Lack of capacity in customer-facing system.
- Volatile and complex development environment – pressure to reduce capital investment, and associated operating cost. Complicated development environment – currently have multi-generations of development systems; need to have consistency in face of limits.
- Barriers to simplifying/optimizing/making more efficient the support organization.

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- Lack of re-use – recreating wheels and resources are being applied developing utility solutions over and over.
- Difficulty of resource and data sharing across organizations.
- Ability of varying levels of services – can localize to different needs in different locations – today have restricted choice of service levels. Inability to “dial up” different service levels for different customer needs, with appropriate billing models.
- Lack of standardized tools – people developing own tools resulting in multiple versions of the truth. Need to integrate and ensure consistency of data.
- Lots of innovation bypassing IT.
- Current environment has little governance on those few individuals that may be tweaking without business value.
- Lack of integrated and well-managed infrastructure – rather sometimes a large diversity of unmanaged infrastructure.
- Today we have difficulty in leveraging innovative technology and ideas, resulting in re-invention.

Cost

Description

Controlling cost has always been an issue and undoubtedly always will. However, there is more attention to hidden cost today including cost of physical space, cost of training, cost of maintenance, cost of energy, cost of disposal, cost of integration, and cost of duplicative systems.

Implications

Not addressing rising costs ultimately has an implication on competitiveness.

How Cloud can Help

It is believed that cloud computing can address this pain-point through the following:

- Organizations can leverage the economy of scale provided by cloud computing providers.
- Organizations can reduce costs associated with physical and energy space by relying on cloud computing.
- Organizations can reduce costs associated with disposal.

Cloud Requirements

- Well-structured customer-centric SLAs
- Billing models that are easy to understand
- Optimal management of business model

Related Raw Pain-Points

- Cost of dwindling physical space – we’re full!
- Human aspects – incremental human capital costs as new IT is added.
- Increasing energy and environmental costs associated with proliferation of IT.
- Training costs – money and time it takes to train.

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- Existing users employ IT outside of governance structure causing sub-optimal local decisions at expense of enterprise benefits. [Consider when an enterprise had multiple departmental proprietary email systems.]
- Disposal costs – sun-setting of infrastructure and equipment.

Need to Remove Obstacles to Innovation

Description

Innovation, or the lack of innovation, is a point of pain for many organizations. In many cases obtaining new infrastructure to test new technologies puts up an immediate roadblock. The roadblocks take the form of added cost and time.

Implications

Not addressing obstacles to innovation effect competitiveness.

How Cloud can Help

It is believed that cloud computing can address this pain-point through the following:

- Organizations can focus value-add on business or mission and allow cloud infrastructure to focus on IT management, IT operations and administration, and IT infrastructure development (incorporation of latest game changing technologies).

Cloud Requirements

- Well-managed cloud governance

Related Raw Pain-Points

- Sizing capacity needed to invest in resources up-front, especially infrastructure – often inhibits the whole project and is a barrier to getting approval.
- IT is actually inhibiting innovation – being stifled by in-house IT departments

Security

Description

Enterprises and their information systems are subject to a range of threats of damage and misuse that can disrupt, or even destroy, their business operations. The damage from one of these threats can be a significant pain-point – if it happens. The cost of guarding against threats to the IT systems is a significant pain-point regardless of whether the threats materialize.

Security is related to risk management, because the risk of security breaches must be managed, like any other business risk. IT security requires special attention and specialized techniques, and is therefore treated separately from risk management in general.

Implications

The cost of a security breach can be very large, particularly when consequential damage is considered. This can include damage through misuse of confidential data (including through identity theft), and loss of goodwill when customers' data is compromised.

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IT security requires investment in security systems and procedures, and also requires staff with security expertise. Because threats can come from within the enterprise as well as from without, the systems and procedures must include internal control and audit. The cost of the systems and staff can be high and, for a small enterprise, disproportionately high.

How Cloud can Help

Use of cloud computing transfers some of the security burden to the cloud supplier. The enterprise can devote less attention to security, and more to its core business. It gains the advantages, described under Risk Management, of large-scale operation, specialized expertise, and transfer of responsibility.

Use of cloud computing also provides a clear separation of concerns between development and support roles, with the customer organization being responsible for development (even where this is contracted out), and the cloud supplier being responsible for support. This can be important for internal control and audit.

Cloud Requirements

- Cloud vendors must offer secure services.
- The levels of security offered must be described clearly in the SLAs.

Related Raw Pain-Points

- We have gone to SaaS – one of the key reasons was security – now more secure. (Lack of) Security in on-site systems.
- Security audit requirements requiring separation of concerns between development and support roles.
- Today we have legal and goodwill implications of security breaches – passing the buck?

Risk Management

Description

All enterprises need to manage risks; that is, to assess the probabilities of events leading to various outcomes and plan accordingly. In most cases, there is an expected outcome, and this is usually a favorable one. For example, in a farming enterprise, the expected outcome is that the crop will grow well and be sold at a good price. But a farmer who plans for this to happen every year will be wiped out by bad weather or a fall in commodity prices. The farmer must make contingency plans to deal with events that cause other outcomes, based on the risks that they will occur, and the same is true for any business.

With IT, the expected outcome is that the systems will continue to run, and that new developments and enhancements will succeed, as planned. But there are risks that must be managed, including that:

- The hardware will fail.
- There will be bugs in the software.
- IT staff will not be able to manage the systems properly (perhaps because key people leave and cannot be replaced).
- New developments will not go to plan (this is, unfortunately, not at all uncommon).

These risks increase as the IT systems get older.

The risks are made greater by the consequential damage that can result from IT failures. This can be particularly high where crucial data is lost, or the confidentiality of sensitive data is compromised.

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The risks of the systems not being properly managed, and of developments failing, are increased when management or development is in the hands of a few key individuals. This is quite common when IT is managed or developed in-house.

Implications

A business that does not manage risks properly will lose money in the long run, just as a roulette punter will lose to a casino that makes sure the odds are in its favor. Ultimately, the punter will lose his shirt, and the business will fold.

IT failures and development problems can lead to unplanned costs, loss of revenue (for example, if orders cannot be taken because the sales system is down), and loss of goodwill because of customer dissatisfaction. These reduce competitiveness, and in the extreme can cause an enterprise to go out of business.

How Cloud can Help

Cloud can help to mitigate a number of risks associated with IT failures, because:

- It is easier for a large organization to manage risks than a small one. A large cloud vendor can manage IT risks much better than a small IT department.
- Because a cloud vendor manages IT risks on behalf of a large number of enterprises, the vendor becomes skilled in IT risk management, and does it much better than most enterprises.
- There is benefit just in having someone else manage the risk. Even if it does not change the odds, it saves worry and nervous energy.

Cloud can be particularly advantageous in mitigating the risks associated with legacy systems, data storage, and dependence on small in-house IT departments.

Cloud can also help to mitigate risks of some business problems that are associated with IT but not caused by IT failures. For example, when a business starts, it may need a significant IT capability, but there is a relatively high risk that a new business will not succeed, and that the large investment in IT will be wasted. Use of cloud, rather than in-house IT, can dramatically reduce the start-up costs, and lessen the penalties of failure. There are other cases where use of cloud can reduce capital expenditure, and mitigate the risk that the expenditure is wasted because of changes to the business.

Cloud Requirements

- The SLAs must make clear the responsibilities of customer and vendor, and the extent to which the cloud vendor accepts risk.
- The cloud vendors should offer legacy system support.

Related Raw Pain-Points

- Ineffective SLAs.
- Customer may not survive – don't want to invest in capital in very early stages – need to wait until signs that the business will survive – risk management/start-up costs.
- Operational risk and cost of maintaining existing legacy – yet to replace, need proven functionality.
- Current environment is overly dependent on few key individuals to support technology – a huge risk.
- Huge risks associated with storing data that we don't want to/aren't competent to manage – want to get rid of data but still access through a competent authority – data security management.
- Disaster recovery – off-site back-up – and risk mitigation for small business.

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Compliance

Description

The cost and complexity of adhering to compliance requirements is a drain on resources, and a significant pain-point. In many cases, particularly where they relate specifically to IT (e.g., in keeping email records), IT support is needed to satisfy these requirements effectively. The requirements are the same for all enterprises, yet each addresses them individually, and this is expensive.

Implications

Enterprises devote resources to compliance unnecessarily. Because the requirements are so complex, and their resources are limited, enterprises may not meet the requirements to the extent that they would wish.

How Cloud can Help

Cloud suppliers can provide support for meeting some compliance requirements for their customers. Because each supplier implements this support only once for many customers, the supplier can devote more resources to the implementation than any single customer, and still deliver it so that each customer pays less than when doing it in-house.

Cloud Requirements

- Cloud suppliers must provide support for common compliance requirements.
- Need to deal with local compliance requirements.

Related Raw Pain-Points

- Adherence to compliance standards – cost, complexity of adhering to compliance requirements – is a drain on resources.
- Regulatory requirements (e.g., Sarbanes Oxley) – need to deal with in a more effective manner, and need to manage exposures better.
- I have to take point approaches to problem X – I'd like to use cloud to do it once – compliance requirements.
- Compliance – cloud is the same, but different requirements in different countries – have to deal with local compliance requirements.

Need to Improve Quality of IT Support

Description

An enterprise can very easily be “locked in” to its internal IT department, and unable to drive up quality by using the lever of competition that it would have for external suppliers. Where an in-house department does not keep abreast of the latest developments, adopts a “not invented here” attitude, or becomes ineffective or inefficient in other ways, it can be hard to remedy the situation. Such problems often first become visible in the help desk, which is the primary point of interaction between business and IT, but this may be only symptomatic of a deeper malaise.

IT is not a core competence of most enterprises, but their dependence on it forces them to give it significant attention and management resource, which would be better devoted to their core activities, if they want to be competitive in the market place.

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Implications

Ineffective or inefficient IT can severely compromise an enterprise's competitiveness. The need to make the IT infrastructure effective and efficient diverts attention and resource from the core business activities.

How Cloud can Help

By using cloud infrastructure services, an enterprise can reduce its dependence on internal IT, reduce the need to devote management attention and resource to its IT infrastructure, and use the competitive dynamics of the cloud marketplace to obtain an IT infrastructure that is more effective and efficient.

Cloud Requirements

- Clear and transparent cloud service descriptions and SLAs

Related Raw Pain-Points

- Governance and management of IT is costly, difficult, and cumbersome – how IT decisions are made. All of which effect the efficacy of the business.
- High costs and low responsiveness of infrastructure help desk. Being able to outsource part of help desk – cloud may help.

Business Continuity

Description

Businesses wish to continue their operations as normally as possible in the event of disaster, such as a fire or flood destroying a data center. The cost of providing duplicate systems and recovery mechanisms in-house can be very high. This is a significant pain-point, especially for small businesses, where the cost is proportionately higher than it is for large ones.

Implications

Businesses must either incur significant costs that decrease their competitiveness, or risk failing when disaster strikes.

How Cloud can Help

- For large cloud vendors, economies of scale make the cost and effort of providing duplicate systems and recovery mechanisms a relatively small overhead. They can deliver disaster recovery capabilities to businesses of all sizes at low cost.

Cloud Requirements

- Ability to hold duplicate copies of a customer's data and software in different locations, with recovery procedures to restore the primary versions from the duplicates
- Support for migration, redundancy, and multiple standby schemes
- Well-structured customer-centric SLAs that describe disaster recovery capabilities clearly

Related Raw Pain-Points

- Disaster recovery – off-site back-up – and risk mitigation for small business.

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Raw Pain Points

What are the pain-points and ramifications of not addressing the pain-points (bound by scope)?

- We have gone to SaaS, one of key reasons was security – now more secure. (Lack of) Security in on-site systems.
- Sizing of capacity investments, provisioning. Lack of capacity in customer-facing system.
- Flexibility of how we bundle services to customers is hampered by current system inflexibility. Different combinations – bundling of products and services.
- Volatile and complex development environment – pressure to reduce capital investment, and associated operating cost. Complicated development environment – currently have multi-generations of development systems, need to have consistency in face of limits.
- Barriers to simplifying/optimizing/making more efficient the support organization.
- Inability to match/align capabilities with needs of the business. Also an issue with knowing what IT capabilities there are that you could possibly take benefit from.
- Disaster recovery – off-site back-up – and risk mitigation for small business.
- Ability to evolve the business process – change or evolve – agility of IT in support of the business.
- Cost of dwindling physical space – we’re full!
- Sizing capacity needed to invest in resources up-front, especially infrastructure – often inhibits the whole project and is a barrier to getting approval.
- Human aspects – incremental human capital costs as new IT is added.
- Increasing energy and environmental costs associated with proliferation of IT.
- Governance and management of IT is costly, difficult, and cumbersome – how IT decisions are made. All of which effect the efficacy of the business.
- Lack of seamless access to partners – interoperability between business partners is still difficult and expensive.
- Lack of re-use – recreating wheels and resources are being applied developing utility solutions over and over.
- Agility and inflexibility – need to be responsive – traditional development costs a lot of money – cloud could be the expansion provision – cost of failure inhibits experiment. Inability to “take a flyer” on a new approach – cost of failure discourages experimentation/innovation.
- Adherence to compliance standards – cost, complexity of adhering to compliance requirements is a drain on resources.
- Ineffective SLAs.
- Customer may not survive – don’t want to invest in capital in very early stages – need to wait until signs that the business will survive – risk management/start-up costs.
- Inability to get point solutions up and running quickly – need quick solutions.
- Security audit requirements requiring separation of concerns between development and support roles.
- Operational risk and cost of maintaining existing legacy – yet to replace, need proven functionality.
- Training costs – money and time it takes to train.
- Difficulty of resource and data sharing across organizations.
- Ability of varying levels of services – can localize to different needs in different locations – today have

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restricted choice of service levels. Inability to “dial up” different service levels for different customer needs, with appropriate billing models.

- Lack of geographic flexibility – be able to do the same thing from different geographic locations. Need location-independence and ability to execute business processes from different locations.
- Existing users employ IT outside of governance structure causing sub-optimal local decisions at expense of enterprise benefits. [Consider when an enterprise had multiple departmental proprietary email systems.]
- Lack of standardized tools – people developing own tools resulting in multiple versions of the truth. Need to integrate and ensure consistency of data.
- Need rapid access to different, and potentially game changing, models of computing and new technologies. Without this, could be left in the dust by competition.
- Technology refresh – transparent introduction of latest technology.
- Lots of innovation bypassing IT.
- IT is actually inhibiting innovation – being stifled by in-house IT departments.
- Current environment is overly dependent on few key individuals to support technology – a huge risk.
- Current environment has little governance on those few individuals that may be tweaking without business value.
- Lack of integrated and well-managed infrastructure – rather sometimes a large diversity of unmanaged infrastructure.
- Huge risks associated with storing data that we don’t want to/aren’t competent to manage – want to get rid of data but still access through a competent authority – data security management.
- Regulatory requirements (e.g., Sarbanes Oxley) – need to deal with in a more effective manner, and need to manage exposures better.
- I have to take point approaches to problem X – I’d like to use cloud to do it once – compliance requirements.
- Time to market – with cloud you have the security and development given, can focus on solution.
- Disposal costs – sun-setting of infrastructure and equipment.
- High costs and low responsiveness of infrastructure help desk. Being able to outsource part of help desk – cloud may help.
- Compliance – cloud is the same, but different requirements in different countries – have to deal with local compliance requirements.
- Today we have legal and goodwill implications of security breaches – passing the buck?
- Today we have difficulty in leveraging innovative technology and ideas, resulting in re-invention.

Affinity Groups of Pain-Points

- Timeliness/agility: 41
- Resource optimization: 37
- Cost: 34
- Need to remove obstacles to innovation: 29
- Security: 29

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- Risk management: 20
- Compliance: 17
- Need to improve quality of IT support: 16
- Business continuity: 8

The numbers are the weights assigned to the pain-points by the workshop participants.

Observation: These are generic business pains – SOA WG identified (more or less) the same set!

Summary of Requirements for Cloud

- Isolation and independence from infrastructure
- Portability
- Elasticity
- Localization
- On-demand local business rules extensibility
- Interoperability
- Transparency of reporting cloud capabilities
- Uniform security and identity management model
- Billing models prevent easy understanding
- Cloud must support local compliance requirements
- Support for migration, redundancy, and multiple standby schemes
- Well-structured customer-centric SLAs
- Well-managed cloud governance
- Uniform security and identity management model
- Optimal management of business model

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