ITPMG

Case for Cloud Computing …*and the Decline of ERP*

Rick Belmonte

Objectives: Clinical and Financial

- Defining Cloud Computing

- Premise: Inevitability of Cloud Computing

- Potential Obstacles to Cloud Computing

- The Challenge to Traditional ERP

- Some Questions to Start Thinking About

- What You Can/Should Do

- Conclusion

Defining Cloud Computing

- *"Cloud Computing is the infrastructure (servers, storage, network, desktops), application software, and/or data provided by a third party supplier and accessible by users via a private or public network (e.g., internet), typically offered on a pay for usage basis."*

- There are multiple delivery networks:
  - Public clouds – via the internet
  - Private clouds – via private networks (in-house or hosted)
  - Hybrid clouds - via a combination of public and private networks

- There are multiple types of cloud computing services:
  - **SaaS**. Software-as-a-Service products provide a complete turnkey application, via a public or private network. SaaS always includes everything to run the application (e.g., hosting) and is typically charged per user, per month – (e.g., Salesforce.com or Google apps).
  - **PaaS**. Platform-as-a-Service products offer a full or partial development environment that users can access and utilize online, even in collaboration with others (e.g., Force.com).
  - **IaaS**. Infrastructure-as-a-Service products deliver a full computer infrastructure via the a public or private network; it can includes full managed services (e.g., operations and DBA support), the data center, and it may include the hardware (e.g., AT&T or Savvis).
  - **DaaS**. Desktop-as-a-Service products which utilize virtualization of desktop systems providing thin clients services (e.g., Desktone, Nasstar) … or…
  - **DaaS**. Data-as-a-Service products capture and process key data on an as-needed basis (e.g., data warehousing). Since this is a newer cloud offering, new offerings are now emerging (e.g., Kognitio).

Premise: Inevitability of Cloud Computing

Computing in the cloud is an inevitable dominant solution for future IT architecture. This is mainly due to five key reasons:

1. Failings of traditional systems architectures

2. Rise of Software as a Service (SaaS)

3. Emerging integration standards (e.g., SOA)

4. Improvements in and benefits of cloud computing

5. Growth and acceptance of Open Source software

1. Failings of Traditional Systems Architectures

- Benefits of traditional systems, especially ERP, have rarely been realized and the issues still exist *(see The Challenge to Traditional ERP on slide. 12)*

- Excessive cost of packaged application operation, maintenance, and support
  - Software maintenance at 20-22%, rising annually with the CPI
  - Ongoing cost of patching and software upgrades
  - Infrastructure provisioning and continued upgrades

- Eroding ability to support in-house developed systems
  - Many systems developed over the past 20-30 years are losing the expertise of the staff who designed and developed them, putting support at risk

2. Rise of Software as a Service (SaaS)

- The availability and sophistication of SaaS software is continually expanding
- The widespread move to outsourcing IT infrastructure opened the door for application software
- Widespread growth and acceptance of processing on the internet made it easier to move to SaaS solutions
- New cloud computing platforms (called Platform as a Service) have given developers a new way to deliver new and more creative solutions that are easily accessed via the web – *e.g., Force.com now offers over 680,000 apps*
- Growing legitimization of SaaS solutions
  - More major companies have moved to SaaS solution
  - Business community and financial market understanding and acceptance of SaaS
- More recognition of SaaS advantages; namely not having to:
  - Acquire and continually upgrade hardware
  - Continually patch and upgrade the application software
  - Maintain the application software
  - Accept the weaker functionality of a specific ERP module
- Ease of acquisition and implementation has enabled business users are acquiring their own SaaS solutions.

3. Emerging Integration Standards

- The continued maturity of integration standards like Extensible Markup Language (XML) and Service Oriented Architecture (SOA), has facilitated integration of SaaS solutions.

    - XML is *a standard…that provides a set of rules for encoding documents or data to a standard specification. XML's design goals emphasize simplicity, generality, and usability over the internet (wikipedia).*

    - *SOA is a flexible set of design principles used during the phases of systems development and integration…a system based on a SOA architecture will package functionality as a suite of interoperable services that can be used within multiple separate systems from several business domains (wikipedia).*

- XML combined with SOA provides a powerful integration mechanism that enables interoperability among disparate applications within a company's firewall or outside it with trading partners.

- These supporting technologies and standards have facilitated the move to cloud based computing *(see slide.8 for a sample architecture that embraces cloud computing)*

Sample IT Architecture with Cloud Computing

Case for Cloud Computing

8
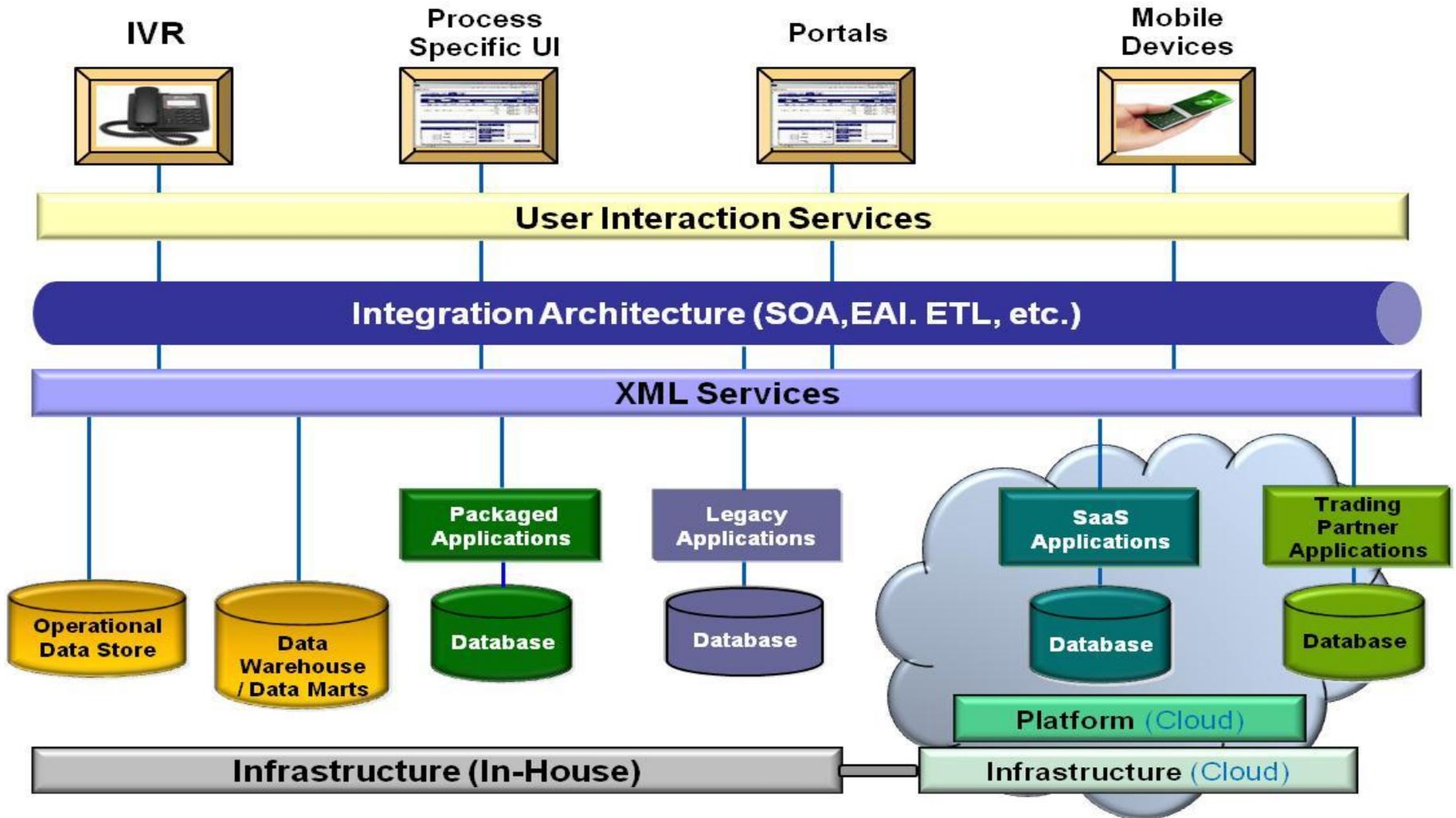
4. Improvements In and Benefits of Cloud Computing

- Key Improvements:
    1. Steadily increasing security and improved supplier track record
    2. Growing number of new solutions that are now offered in the cloud
    3. More advanced functionality than traditional systems

- Key Benefits:
    1. Lower cost to implement, operate, and manage new solutions
    2. Reduced time to implement new solutions
    3. Easier to use
    4. More advanced functionality
    5. Facilitates mobile computing
    6. Facilitates application interoperability with trading partners
    7. Dynamic scalability
    8. Elimination of an up-front commitment
    9. More rapid recovery and restore capabilities
    10. Ability to reach extended user communities

5. Growth and Acceptance of Open Source Software

- The growth and acceptance of open source software also supports cloud computing, since they share many of the same drivers, including:
  - Low barrier of entry for users to try new software
  - Ease for developers to build new applications and make them readily accessible to any interested party with web access
  - Focused on facilitating interoperability of applications and data
  - Component based architectures that enables programs to be used as-is, and extended rather than replaced to provide new functionality
- An increasing number of open source programs are now aimed at cloud computing and Web 2.0.
- Platform as a Service offerings (e.g., Google's AppEngine, Salesforce.com's Force.com) recognize that the internet should be the underlying platform, not a single vendor's proprietary technology.
- Developers will provide open source solutions for the cloud, and build on services that are designed to be federated rather than centralized.
- While many cloud platforms and applications are proprietary today, they mostly operate on open software stacks (e.g., Linux, Apache, MySQL).
- The upshot is increasing synergy between open source and cloud computing – each supporting the other's goals.

Potential Obstacles to Cloud Computing

- Internal Obstacles

  - Concern about risk…*cloud is maturing and no longer leading edge*

  - Perceived lack of control…*companies must manage still manage their solutions*

  - Security concern for sensitive data…*improving ; can use some private clouds*

  - Fear of losing staff…*need to adjust roles and capabilities*

  - Incompatibility with existing architectures…*must revise architectures for the cloud*

  - Difficulty in tailoring the solution to your needs…*apply component-based extensions*

- External Obstacles

  - Resistance by the leading ERP vendors…*the market is moving with new offerings*

  - System Lock-in…*utilize open source where possible; adhere to standards*

  - Data confidentiality…*improving; can use some private clouds*

  - Performance unpredictability…*new virtualization solutions will help*

  - Lack of scalable storage…*can offload historical data to reduce cost and scale easier*

All of the above areas are manageable

The Challenge to Traditional ERP

- After nearly 20 years of implementing ERP systems, many companies realize that they never achieved the forecasted benefits, and their ongoing support costs have been much more than they ever anticipated. This is due to…

  - Over-hyping benefits proclaimed by suppliers and analysts

  - Difficulty and cost in implementing the ERP system

  - Difficult to learn and use

  - Never delivered the business intelligence (BI) that was promised

  - Lack of understanding on the total cost of ERP ownership

  - Inflexible scalability

  - ERP solutions typically delver "worst of breed" solution

  - Lack of business process improvement

  - Consolidation of key application software companies

- Many companies did achieve some tangible benefits from their ERP solutions.

  - Typical benefits were from replacing aging systems that had inadequate capabilities and needed replacement.

  - Others used an ERP solution to standardize their business processes and disparate systems performing the same functionality across the organization.

Some Questions to Start Thinking About

- What are your plans for the future of your ERP system?

- Will you continue to be wedded to your ERP system even if it has failed to fulfill its promise and users are still not pleased with it?

- How does cloud computing factor into your enterprise architecture plans?

- What will you do if new, more advanced, software offerings are made available via SaaS?

The choice is yours - the future of how cloud computing impacts your organization awaits.

What You Can/Should Do

1. Educate yourself and your organization on the benefits and requirements of the cloud

2. Reassess your IT strategy and revise your enterprise architectures to clearly define how cloud computing (and ERP) fits into the future IT direction,
   - Be sure to consider how cloud computing aligns with your existing architectures

3. Conduct an objective assessment of your existing capabilities required to support the new architecture

4. Evaluate your capacity for change as you define your IT strategy and roadmap

5. Define the business case for moving to cloud computing

6. If the business case is strong, and your assessment indicates that you're prepared, then start the transformation process

7. Start improving capabilities needed to support the new cloud computing architecture:
   - Integration, Architecture Management, Business Intelligence

Conclusions

- Cloud computing has moved from an interesting new approach for solution delivery to a solid Enterprise Architecture model.

- It's growth in popularity and industry acceptance has moved it from a "bleeding edge" to a mainstream technology solution

- Although it has some obstacles to overcome, its benefits are still compelling

- Determine the steps that you can take to define the role of cloud computing in your enterprise

To receive additional materials and details on

Case for Cloud Computing
…and the Decline of ERP

contact ITPMG at:

by email:
information@itpmg.com

or phone:
+1.843.377.8228