Software as a Service

History

- 60s
  - Centralized hosting of business applications
  - service bureau
    - company which provides business services for a fee
    - eg. IBM
    - time-sharing
    - sharing of a computing resource among many users by means of multiprogramming and multi-tasking
  - utility computing
    - a service provisioning model in which a service provider makes computing resources and infrastructure management available to the customer as needed, and charges them for specific usage rather than a flat rate
  - mainframes

History

- 90s
  - Application Service Provider (ASP)
    - thanks to expansion of the Internet
  - class of centralized computing
  - services of
    - hosting
    - managing specialized business applications
  - reducing costs through
    - the solution provider's specialization in a particular business application
    - central administration

History

- 2001
  - Software as a Service
  - extends the idea of the ASP model
  - software vendors
    - first ASPs were focused on managing and hosting of third-party independent software vendors' software
  - SaaS
    - typically develop and manage their own software

History

- application clients
  - ASP
    - Client – Server
    - initial ASP used thick clients
  - SaaS
    - Thin Clients
    - Web browsers
- software architecture
  - ASP
    - maintaining a separate instance of the application for each business
  - SaaS
    - utilize a multi-tenant architecture
    - multiple businesses and users

Applications

- Well known SaaS
  - Gmail
  - Google Drive
  - Facebook
  - Enterprise Line of Business (LOB) applications market salesforce.com
- Office
- Messaging
- DBMS software
- management software

Applications

- CAD software
- development software
- accounting
- collaboration
- project management
- customer relationship management
- management information systems
- enterprise resource planning
- invoicing
- human resource management
- content management
- service desk management

Architecture – provider

- Cloud
- Cloud Service models
- support of scalability
  - horizontal scaling
  - the application is installed on multiple machines
- tenant
  - multi-tenant services
    - Vast majority of SaaS solutions
    - a single
      - version of the application
      - configuration
      - hardware, network, operating system
    - advantage in comparison with traditional software
    - multiple physical copies
    - potentially different versions
    - different configurations
  - "single"-tenant
    - rarely
    - solved by virtualization

Architecture – client

- Thin Client
  - Web Browser
- Hybrid
  - Dropbox
- For integration with internal systems
  - Integration protocols
    - HTTP
    - REST
    - SOAP
    - JSON
- Application programming interfaces

Business models

- Subscription fee
  - User
  - Time unit
    - typically
      - month
      - annual
  - Transaction
  - Support
- Advertising

- Freemium
  - basic functionality is for free
  - restrictions in
    - capacity
    - functionality
    - support
    - users
    - time
    - bandwidth
  - money si charged for
    - proprietary functions
    - functionality
    - ...
  - multi-tenant

How to describe to managers?

- Managers are not IT experts
- They are focused on core business of the companies
- They understand the language of the money
- They see IT as the source of problems and non stability

Positive	Negative
Strengths	Weaknesses
Opportunities	Threats

Strengths

- Less risky
- Immediate
- Reduce IT support costs
- Initial setup cost for SaaS is typically lower than the equivalent enterprise software
- Architecture
- Economy of Scale
- Enables Mashups

Low risk level

- Customer
  - Lower initial investment
    - Software and hardware
  - Even the long time usage price is higher
    - Compare with better ROI (return of investments)
    - Avoiding the peaks of cash flow (the highest danger is based on unexpected costs)
  - Example
    - CRM or ERP system
- Provider has regular income

Immediate

- SW deploy
- Updates
  - more often
  - update is decided and executed by provider, not by customer
- single configuration
- faster testing
- vendor has access to
  - all customer data
    - expediting of design
    - regression testing
  - analytics of user behaviour

Weaknesses

- Migration of data
- Integration of clients
- Tailored customization
- Can't directly access a company's internal systems
- Customer might be forced to use a new versions

Opportunities

- SaaS Integration Platforms
  - Complex systems that integrates particular services
    - CRM
    - ERP
- Growth of SaaS sales on global market
- Enables Mashups
  - integrating content from more than one SaaS
  - to create a single new service displayed in a single graphical interface

Threats

- Unreliable provider of the service
  - Bankrupt
  - The physical presence of data
- Security and privacy
  - is common corporate infrastructure more secured than data centres of cloud?
  - HTTPS
- Connection
  - Latency
  - Reliability

Sence of SWOT

- SaaS is only one from many solution
- Task is to give proper service for concrete situation
- Managers need to understand
  - Advantages
  - Risks
- To have real expectations

Conclusion

- SaaS is one way to distribute service
- In many points of view has positive influence to both partis business
- Needs to be described and setted properly