Cloud Computer

1. Cloud computing
   1. Who invented Cloud Computing
      1. John McCarthy
         1. 1961 – MIT
            1. Time – sharing may lead one day to utility computing
            2. Utility computing
   2. Outsourcing many/all/part of computing
   3. Use of virtualized components
   4. Focus on service
   5. Pay as you go
2. Cloud
   1. Types
      1. Infrastructure as a service (Iaas)
         1. Ec2, Rackspace, Slicehost …
      2. Platform as a service (Paas)
         1. Azure, GAE …
      3. Software as a Service (Saas)
         1. S3 (storage)
   2. Deployment
      1. Private clouds
      2. Public clouds
      3. Hybrids clouds
      4. Community clouds
      5. Special purpose clouds
   3. Stakeholders
      1. Cloud providers
      2. Cloud reseller or aggregator
      3. Cloud adopters (e.g. service vendors)
      4. Cloud tool providers
   4. Non-Functional Aspects
      1. Elasticity
         1. Horizontal & vertical scalability
      2. Reliability
      3. Qos
      4. Adaptability
      5. Availability
   5. Economic aspects
      1. Cost reduction
      2. Pay per use
      3. Time to market
      4. Going green
   6. Technology
      1. Virtualization
      2. Multi-tenancy
      3. Security & privacy
      4. Data management
      5. APIs
      6. Metering
      7. Tools
   7. Related technology
      1. Internet of service
      2. Internet of things
      3. Grid
      4. Soa
   8. Opportunities and risks
      1. Cloud computing offers
         1. Reduce costs
            1. E.g. better utilization of your equipment
         2. Avoid long-term investment into HW and SW 🡪 pay as you go
         3. Flexibility …
      2. Opportunity
         1. Focus on your business needs
            1. Rethink your business processes / workflows
         2. Rethink your IT strategy
            1. What are we paying now and how much are we using IT?
            2. What is possible if you treat IT as a commodity?
            3. What is possible if you pay-as-you-go?
3. Looking ahead
   1. Clouds are here to stay
      1. Hopefully we will see more vendors
         1. EC2 is dominating player
         2. Cloud offerings have a major impact on businesses
      2. Strong growth
         1. Ones you have tried cloud-computing its hard to go back
      3. Increased diversity
         1. You get what you pay for
         2. Free != no costs
      4. More Saas offerings
         1. Companies realize new revenue streams
         2. Could you be offering your services as Saas?
4. Mobile cloud computing
   1. Linking mobile device to cloud
      1. Powering to the device
   2. Challenges?