

CA FINAL - ISCA - SUMMARY - NOV 15

CHAPTER 8 EMERGING TECHNOLOGIES

A.1. **Cloud Computing** - use of computing Resources as a service through ^(Internet) networks. ie computation done through Internet. eg- google Apps.

- Combination of H/W & S/W → Multiple servers → Huge storage capacity
- Location of Remote server Not known to users, → Anywhere Anytime Access.
- No Need of Maintenance of Resources by users → Shared pool of app & Resources.
- Independent Platform → Highly Dynamic, scalable → Pay only for what they use
- Service on demand → Less costly → Access thru simple front end infrastructure.
- Agile → No Need to invest in New infrastructure, S/W, etc.

[USE THIS]

A.2. Pertinent Issues of cloud computing [mt : USE THIS]

1. Unexpected Behaviour
2. Security Issues
3. Environment friendly Cloud compⁿ
4. Threshold Policy
5. Interoperability
6. Hidden Cost
7. Security Issues

[RACE IS]

A.3. Goals/Pertinent Objectives of Cloud Computing

1. Rapid Provision of Resources
2. Anywhere Anytime Access
3. Reduce Cost / Energy consⁿ
4. Create highly Efficient IT Eco system
5. Consolidate IT Infrastructure into more integrated.
6. Scalability as per evolving Biz Needs.

A.4. Cloud Computing Architecture/structure-

- ✓ Front End + Central server.
- ✓ BackEnd

A.5. Cloud Computing environment/ Types of Cloud

- Public clouds | provider clouds
- Private clouds | Internal clouds
- Hybrid clouds.

[SPINC]

A.6. Cloud Computing Models [mt : SPINC]

- IaaS - Infrastructure as a Service
- PaaS - Platform
- SAAS - Software
- NAAS - Network
- CAAS - Communication.

VPR (ASM)²

very Popular
Ashwani Bapna

A.7. Characteristics of Cloud Computing

1. Virtualization
2. Performance
3. Reliability
4. Availability
5. Scalability
6. Multisharing
7. Agility
8. Service in pay per use Mode
9. Maintenance.

[QU AB CA]

A.8. Advantages of Cloud

1. Quick Deployment
2. Unlimited Storage
3. Easy Access to Info.
4. Backup & Recovery
5. Cost Efficiency
6. Automatic Software Integration.

A.9. Challenges of Cloud Computing

1. Confidentiality
2. Integrity
3. Availability
4. Legal Issues & Compliance
5. Incident Response
6. Audit
7. Data Stealing
8. Identity @ Access control
9. Architecture
10. Governance
11. Application Security
12. Privacy
13. Software Isolation

CIA
|
LIA
|
DIA
|
GAPS

- If a piece of SW on one Node fails, other pieces of SW on other Nodes may also fail.

B.10 **Grid Computing** - cloud compⁿ evolved from Grid Computing

- It involves connecting geographically remote computers into a single Network to create a virtual super computer by computational power of all computers on a grid. In Grid, all the machines, share the power of processing & other resources, to enhance the capability of computing & to solve complex Tasks
- GC uses SW that divide & carve out pieces of a program as one large system image to several computers.

[SMSMS]

B.11 Similarities &

1. Scalable
2. Multitenancy & Multitasking
3. Resource Sharing - Improving Peak Load Capacity & Reducing Infrastructure Cost
4. provide SLA for guaranteed uptime availability.

Differences between CC & GC

1. **Grid** is well suited for Data-intensive Storage. i.e. Data must be large for Maximum benefit. It's Not economical to store small object such as 1 byte
Cloud can store 1 byte to several Tb.
2. **Grid** focus on computationally intensive operations
Cloud offer 2 types of Instances - Standard & High CPU

C.12. **Mobile Computing Services**

A Technology that enables sharing of info. across wireless platform.

It allows mobile workforce to access full range of corp services & info from anywhere @ anytime, hence improving their productivity & operational efficiency

C.13. Benefits of Mobile Computing

1. Remote access to corporate Knowledgebase
2. Anytime Anywhere access to Corporate Services & Info.
3. Update Work order status by mobile sales personnel. facilitating excellent communication
4. Access Work Order Details, remotely, by Mobile Workforce.
5. Improves @ Effectiveness by → enhancing Info quality ↑, Accessibility ↑
Info flow ↑ & Ability to control mobile worker

Sukriti jain

D.14. **BYOD** - Bring your own Device

A Business Policy, that allows employees to use their preferred Computing devices for Business purposes. eg- smart phone, laptop.

ie it welcomes employee to use personal devices, to connect to corporate Network & Access info. & application.

* BYOD Benefits -

1. Flexible workspace
2. Mobile Employees
3. Work beyond office hours (Productivity ↑)
4. Employee Satisfaction ↑
5. Reduced IT Desktop cost ↓
6. Mass Adoption of improved technological Device

CO'S
WET

[NADI]

D.15. Emerging BYOD Threats

- Network Risk
- Application Risk
- Device Risk
- Implementation Risk

E.17. **Social Media** and **Web 2.0**

Social Network is created by a group of Individuals with common interests & objectives. Network can be public or private, depending upon the confidentiality of info. Its success depends on contribution, interest & motivation of its members, along with Technology backbone & platform

Web 2.0 is a term given to 2nd generation of 'www'. It is focused on ability of ppl to Collaborate & share info online.

It is a transition from static HTML Web pages to a more dynamic Web, that is more organized. It connect ppl in numerous ways & utilize their collective strengths in a collaborative manner. Web 2.0 provides an ideal platform for implementing social Networks to grow

helping growth & sustenance of

Wifi #
Maine
FB 42
Comment
fch21

E.18 Components of Web 2.0 for Social Networks

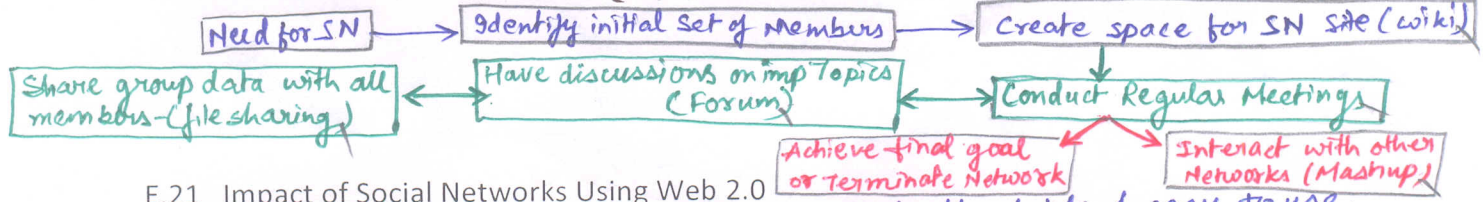
- Wikis
- Mashups
- Blogging
- File Sharing / podcasting
- Folksonomy / tagging
- Communities

E.19 Types and Behaviour of Social Networks / Categories -

- Police & Military
- Fine Arts
- Study circles
- Mixed Network
- Inventors
- specialist groups
- others
- Social Contact
- Sporting
- Shopping

PM #1
OFIS
SH, Rajpath

E.20 Life Cycle of Social Networks (steps)



E.21 Impact of Social Networks Using Web 2.0

SN built on Web 2.0 concept has become so cost affordable & easy to use, that more & more people are migrating to this wave.

E.22 Future Scope of Web 2.0 in Social Networks

Web 2.0 is an integral part of SN & in future, it will provide much more exciting features, which will aid the growth of SN even more.

E.23 Benefits for Social Networks using Web 2.0

1. provides platform
2. Affordable cost
3. very easy pick up time
4. No New knowledge / skills reqd
5. Fast Adaption
6. People coming closer - geographical boundaries reduced
7. increase Social Collaboration hence achieving goal of social network.

PACKS
Cost & Time

E.24 Challenges for Social Networks using Web 2.0

1. Data Security, Privacy & Confidentiality loss
2. Computer illiterate user - lot of education, Advertisement, time - cost Burden
3. Malicious user - perpetuate social network - hinders individual privacy
4. No Basic Amenities in developing areas of world,

DUMB

F.25 Green IT / Green Computing / ICT Sustainability -

→ IT refers to the study & practice of establishing / using computers & IT Resources in a more efficient, environment friendly & Responsible way

→ Computers consume a lot of Natural Resources - RM to Mfg - Power to Run & - problems of disposing at the end of Life cycle

→ GIT includes - implementation of energy efficient CPU/peripherals, reduced Resource consumption, proper disposal of e-waste, voluntary labeling prog (Energy Star)

F.26 Steps for Green IT

1. Power down CPU during inactivity
2. Power up / down peripherals, as per need.
3. Use LCD - Not CRT
4. Use Notebook computers - Not Desktop
5. Use power @ features - Display auto Turn off
6. Minimize use of paper & recycle waste paper
7. Dispose e-waste as per Regulations
8. Employ Alternative sources of energy.
9. Do all computer related tasks in continuity & switch off the device at other times

Recommendations
to meet GIT
objectives

F.27 Green IT - Best Practices

1. Involve Stakeholder in GIT initiatives
2. Partnering
3. Guidelines for using Best Practices
4. On going Communication abt GIT & Campus commitment to GIT best practices.

C-PiG

F.27 Green IT Security Services and Challenges

IT solution providers are offering (GSS) Green Security Services in many ways. Basic aim is to increase the customer's energy savings thru GSS & assess that How Sustainable computing technology can immediately help the environment. GSS emphasizes on security tools, methods & practices that reduces a company's environmental impact.

1. How to make GSS - cost efficient for service providers
2. What to look in Green Security products.
3. Challenges in Security Service Market
4. How security services fare in Recession.
5. How to evaluate a client's infrastructure to accomodate green IT.
6. To estimate the scope of GSS
7. To cope with lack of GSS in the Mkt.