The concept of security applies to all information. Security relates to the protection of valuable assets against loss, disclosure, or damage. In this context, valuable assets are the data or information recorded, processed, stored, shared, transmitted, or retrieved from an electronic medium. The data or information must be protected against harm from threats that will lead to its loss, inaccessibility, alteration or wrongful disclosure.

The protection is through a layered series of technological and non-technological safeguards such as physical security measures, background checks, user identifiers, passwords, smart cards, biometrics, firewalls, etc. The security concept is summarized in the security objective.

**Security Objective**: The objective of information security is “the protection of the interests of those relying on information, and the information systems and communications that deliver the information, from harm resulting from failures of availability, confidentiality, and integrity.”

**Learning outcomes:**
- Define e-commerce and describe the numerous terms that reflect an e-commerce perspective
- Discuss the implications to organisations that enter into an e-commerce initiative
- Describe the numerous risks to organisations and customers in relation to E-Commerce
Course Structure

- Week 1 – Security Governance
- Week 2 – Managing Security in the organisation
  - Risk Management – Part 1
- Week 3 – Risk management – Part 2
  - Breaches, threats, vulnerabilities
- Week 4 – Risk management – Part 3
  - Risk mitigation
  - Access controls
- Week 5 – IS Security
  - Computer forensics
- Week 6 – The impact of e-commerce on the organisation
  - The role of e-security
- Week 7 – Security over the internet
- Week 8 – Security as a critical business function
  - Designing a Secure System
  - Is this achievable?
- Week 9 – Risk Management – Part 4
  - Security policies and procedures
- Week 10 – Business continuity plans
  - Disaster recovery
- Week 11 – Security Privacy and law
- Week 12 – Current issues and future trends
- Week 13 – Revision and exam preparation

E-COMMERCE

E-Commerce refers to all commercial activity conducted with the aid of electronic devices or via computers connected to each other using some medium – internet

Computers also include:
- hand held devices (PDAs)
- M-commerce (Quirk & Forder, 2003)
  - Mobile phones

Further definitions:

Often referred to as simply e-commerce, business that is conducted over the Internet using any of the applications that rely on the Internet, such as e-mail, instant messaging, shopping carts, Web services, UDDI, FTP, and EDI, among others.

Electronic commerce can be between two businesses transmitting funds, goods, services and/or data or between a business and a customer.
THE TERMS!!

- B2B
- B2C
- C2B
- C2C
- E-banking
- E-shopping
- E-tailing
- E-govt
- E-marketplace
- E-globalisation

Electronic Commerce

- E-banking: organising accounts and paying bills
- E-shopping: purchasing goods from a website
- E-tailing: selling goods to shoppers from a website
- B2B: sending and receiving orders to and from business partners
- E-govt: lodging tax returns, business activity statement (BAS), conducting other transactions with other government agencies
- E-marketplace
- E-globalisation

e-Business Reality

Customer perspective: But I Ordered It on the Web Months Ago

Problems Shipping Online: Survey of 12 Million U.S. Households

- 34%: Organisational problems when ordering online
- 14%: Ordered goods that never arrived
- 14%: Ordered goods that never arrived but were billed
- 12%: Ordered goods that never arrived, were never billed
- 8%: Tired to contact supplier without success
- 7%: Ordered goods that did not arrive, specified date or time
- 7%: Received orders that did not meet specifications
- 5%: Order was processed more than once

Friday September 10, 1999

Customer

Enterprise
Projected growth in E-commerce

![Graph showing projected growth in B2B revenues from 1999 to 2004 across different market research groups.]

Source: Gartner Group, January 2000
Boston Group, Forrester Research
and Yankee Group, 1999

B2B Estimates

- The B2B market in the US is projected to grow to approximately $1.5 trillion in 2004.
- B2B is still in the early adopter phase.
- By 2004 20% of B2B sales in the chemical industry will be internet based.
- Asia is embracing eCommerce sooner than anticipated.
  - IDC predict B2B in Asia (excluding Japan) will grow to $32.6 billion in 2003.
  - B2B sales in Japan will reach $62 billion in same period.

% of e-commerce via electronic marketplaces

2000
- Marketplace based trade: 87%
- Direct trade between partners: 13%
- Total: $200 billion

2004
- Marketplace based trade: 47%
- Direct trade between partners: 53%
- Total: $2.7 trillion


87 %
13 %
47 %
53 %

Total: $200 billion
Total: $2.7 trillion
So is eCommerce Real?

Commercial use of the internet is only 5 years old

- Over half of Schwab’s transactions come over the Net
- In just 4 years Amazon became the USA’s 3rd largest bookseller
- Cisco takes 99+% of their orders over the Net
- Over 50% of ALL new/secondhand car buyers do their research over the Net
- Australian Wine Society
  - http://www.wine-searcher.com/
- Sony Playstation
eCommerce Savings Potential

- 50% reduction in processing time
  Fisher Scientific, 3M

- Reduction in purchasing costs from $45 to $1.50 per order
  GE and 3Com

- 50% reduction in the time taken to order parts and therefore a saving of $2 mil. In stored value
  Alaska Airlines

Source: Forrester, May 1998

Who is using it?

- 40,000,000+ businesses worldwide
  <10% have “active” websites
- The Fortune 1000
  Most have websites
  >80% have functional intranets (beyond email)
  <25% conduct REAL eCommerce (trading partners)

- <10% CONDUCTING eCommerce
  HAVE COMMERCE SITES INTEGRATED TO BACK OFFICE FULFILLMENT SYSTEMS

WHY???
The 2000 Executive View: Drivers of E-Business

- Improve customer relationships
- Increased sales
- Reduce operational costs
- Enhance market and consumer reach
- Improve business efficiency
- Increase productivity
- Other

ECommerce Drivers

Business Drivers
- Increasing competition and globalization
- Growing opportunity
- Financial opportunity
- Efficiency and cost saving
- Enhanced market and consumer reach
- Real-time needs
- Regulatory and taxation issues

Technology Drivers
- Increasing adoption of internet technologies
- Business intelligence
- Collaborative applications (e.g. planning)
- Consolidation of industry standards
- Simplification of application technologies

Opportunities and Challenges

Opportunities
- New Business Models
  - Improved accessibility
  - New business partners
  - Worldwide presence 24x7
  - New sales channels
- Saving Potential
- Employees
  - More responsibility
  - Less administration
  - Less training
- Efficient Internal Enterprise Processes
Opportunities and Challenges

Challenges

- Increasing Global Competition
  - Greater price transparency
  - Better product comparability
- Purchaser
  - To be better informed
  - To have higher expectations

- Success factors
  - Customer service
  - 1 to 1 marketing
  - Logistics organisation
- Consequences for existing logistical processes and partnerships

Economic implications of e-commerce

- Market Freedom (competition)
- Business Ethics and Compliance (issues of privacy)
- Stakeholder Protection (security of transactions and issues of availability)
- Information Transparency
- Cost Effectiveness
- Regulatory Neutrality

Risks Within e-Business

- Strategic Risk
  - Strategic Direction
  - Dependence on Others
- Cultural Reputation
- Governance
- Tax
- Currency
- Information Security
- Risk Management
- Operational Risk
- Project Management
- Business Process Controls
- Legal and Regulatory
- Technology
- Human Resource
- Financial
- Competitive Environment
- Technological
- Strategic Risk
- Business Process Controls
- Operations
- Technology
- Legal and Regulatory
- Human Resource
- Financial
- Competitive Environment
- Technological
Risks: Strategic Direction

- Success of e-business initiative is directly linked to the company’s ability to develop and implement a strategic plan.
- This plan can help in:
  - Identifying major e-business growth initiatives
  - Identifying gaps
  - Reducing channel conflicts
  - Benchmarking against best practices
- Channel Enhancement
  - Failure to realise strategic implications for sell side
  - Buy side risks are relatively low
- Value Chain Integration
  - Increased exposure to failure as partners involved
- Industry Transformation
  - Risk associated with discarding traditional business models
- Convergence
  - Risk associated with investment and direction

Risks: Competitive Environment

- As more companies exploit e-business the competition in stable markets increases.
- Implementation delays pose risk to “first mover” advantage.
- Ability for companies to match other company’s offerings.
- Barriers for establishing business partnerships are
- Increasing global competition.
- Increase in customer expectations
- Price and product transparency.
Risks: Dependence on Others.
- New partnerships cause a shift in the balance of power.
- Previously guarded processes could be handled by outside partners.
- Which Processes and what Risks?
  - Implies a level of trust
    - Proprietary information
  - Joint problem solving and strategic development


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Risks: Security
- Trust cannot be established without effective security
- Information Technology Infrastructure must support:
  - Confidentiality - Privacy
  - Integrity
  - Availability
  - Authentication - Identification, authorisation
  - Nonrepudiation
  - Accountability
- Automated channel connection to partners increases risk.


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Risks: Reputation
- Competitors can quickly establish reputations.
- Managing customer expectations.
  - Web page becomes the face of the company
    - Appearance
    - Navigation
    - Learning
    - Content
    - Speed
    - Errors


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Risks: Culture

- E-business brings with it cultural change at the highest level.
- Employees maybe acting on behalf of other partners.
- Global languages and customs must be understood.
- Change management issues
- Executive leadership

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Risks: Technology

- Solution selection
- Poor performance and lack of reliability
- User Training of new systems
- Speed at which the system becomes obsolete
- E-business integration
  - Internally
  - Externally

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Risks: Governance (management)

- Appropriate organisational structure to support e-business initiatives:
  - Central leadership Vs cross functional
- Auditing personnel need to understand e-business legal and security requirements
- Partners need to be involved in decisions.
- Thorough and open documentation required to prevent misinterpretation.
- Protection of intellectual property.

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Risks: Project Management
- Top level commitment
- Change management risks
- E-business integration
- Data standards
- Lack of coordination across the company and partners

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Lecturer: Sue Foster
IMS5002 - Semester 1, 2005

Risks: Operations
- Lack of E-skills
  - Development
  - Maintenance
- Business Continuity Plans
- Scalability

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Lecturer: Sue Foster
IMS5002 - Semester 1, 2005

Risks: Legal and Regulatory
- Business practices must match latest legislation.
- Lack of clarity
- Clash of laws and culture
- Conflicting jurisdictions
- Intellectual property
- Piracy of web page content
  - Recourse?

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Lecturer: Sue Foster
IMS5002 - Semester 1, 2005
Human Resources

- Changes in roles and responsibilities
- Education and training
- Getting and retaining skilled staff.
- Change Management

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Risks: Business Process Controls

Typical risks

- Backup/recovery procedures.
  - Problems affect the entire enterprise.
- New business rules
- Support

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Risks: Tax and Currency

Tax
- Ambiguity of worldwide tax laws
- Jurisdiction

Currency
- Internal
  - Get the investment for new strategies
- External
  - Multiple currencies and exchange rates
Main Trends (1)

- **The E-Conomy goes main street**
  Online consumers with high expectations in terms of information quality, transaction usability and speed of delivery appear

- **The wired workforce arises**
  More information will be given in employees’ hands - direct involvement of nearly all employees in business processes through intranet technology and specific applications (virtual work community)

- **Companies tear down information boundaries**
  Joint business processes with partners are established by sharing information - B2B e-commerce takes off

Main Trends (2)

- **Products become commodities**
  The value of an offer (and the difference to others) will not be primarily the product itself - dynamic and individual presentation (incl. prices etc) will be key

- **Behaviour & Interaction becomes valuable data**
  Analysis of customer behaviour and dynamic reactions in real time lead to customer centric applications

- **Communities are formed**
  Specific knowledge / content will be exchanged in communities

- **Networks allow new forms of learning**
  Knowledge management and continuous learning on a self-service basis to “create” the empowered employee

LEGALLY SPEAKING!!
LEGAL IMPLICATIONS

- E-commerce is replacing a global marketplace tradition of signed writings as the ultimate best evidence of the law of contract to one of electronic intangible records.
- There is little evidence that an electronic record will be considered conclusive legal proof.
- The value of an electronic record often depends on the effectiveness of the security controls that have been instituted to protect the authenticity and integrity of the record.

E COMMERCE THE ISSUES

- Vendor issues
- Legality
- Privacy
- Financial issues
- Accountability
- Financial misstatements
- Shareholder loss of faith
- Loss of customer confidence
- Confidentiality
- Availability
- Integrity
- Non repudiation
- False Advertising
- Non repudiation
- Auditability
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Non Repudiation

- In business it is necessary to ensure the other party cannot later deny they are bound by the contract
  - The goal of non repudiation
    - Forged signature
    - Signed under duress
- Reduce the chance of this happening
  - All parties sign written documents – fax – yes but what about the internet?

CONCLUSION

The lecture today has only touched on some of the many issues that impact on organisations that have developed or are thinking of developing an e-business initiative.

Some of the organisations who jumped into e-business fairly early, without first considering the implications did not survive – simply because they were unprepared for the influx of online orders.

Now organisations and customers have the added uncertainty of the security of transactions when conducting business online. We will discuss this further next week.

REFERENCES

- E-business guide: a guide to doing business online (2004). Australian Government located at: