Cybercrime Forensics Specialist Group

Cybersecurity in an Ever Changing World

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Objectives

- Explore the development of cybersecurity
- Discuss the challenges facing society as a result of growth in cyber crime
- Think about how digital forensics can support cybersecurity agenda
- Consider the opportunities for the BCS Cybercrime Forensics Special Interest Group in developing cybersecurity professionals

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Today's Digital World

- There are many benefits of living in a connected digital world
- Exciting new technological developments
- All of these have tremendous impact on the way we live our lives
- However,

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Application of Cybersecurity

- The reliable, secure exchange of digital information is vital to most human activity
- Critical national infrastructure
- Business and industry
- Personal data sets
  - Managed by others
  - Managed personally
- Protection of children

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Digital Environment

- Cybersecurity exists in a complex environment
- Global growth in the digital economy
  - Internet of Things, Mobile technologies, Wearable technologies, Cloud computing, Big Data, Entertainment , Education
- Demands for easy to use systems, accessible from everywhere all the time
- Growth in the amounts of digital data and information
- Complacency about personal security - sharing our thoughts, beliefs and the details of our daily lives
- Increase in cybercrime – 63% increase between 2016 and 2017
- Increase in amount spent on cybersecurity
  - Globally £70 billion in 2017
  - Rising to £86 billion by 2020
- One of the greatest threats is that society is unaware of the dangers

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Where are threats coming from ?

- Advanced persistent threats
  - Targeted, organised and funded
- Cyber crime (dependent and enabled)
  - Opportunistic to serious organised
- Hactivism
  - Idealistically motivated
- Insider threats
  - Masqueraders, clandestine users, misfeasors
- Nuisance threats

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Need for Cybersecurity

- Cybersecurity is an economic/societal priority
- Objective of cybersecurity is to
  - Reduce risk
  - Minimize attack
  - Build trust
  - Create safe environment
- Society needs a skilled cybersecurity workforce to prevent and defend against cyber attack

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Why is Cybersecurity not Applied ?

- Implementing cybersecurity can be time-consuming and complex
- Cybersecurity can slow down functionality
- Managing and keeping up to date can be costly
- Cybersecurity solutions are often clumsy
- Lack of skills to apply cybersecurity
- Cybersecurity can impede management and smooth running
- Not considered an issue
  - for example printers

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Utilising Digital Forensics in Cybersecurity

- Principles of digital forensics support and complement cybersecurity
- Utilise digital forensics investigation principles in breach management and incident response
  - Potentially in trying to identify perpetrators
  - Certainly in identifying system weaknesses and vulnerabilities
- Potentially acts a deterrent

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Education is Key

- Cybersecurity to be embedded in school curriculum
- Cybersecurity offered as undergraduate specialism
- Cybersecurity as a degree apprenticeship
- Cybersecurity embedded in computer science programmes
  - Work done by $(ISC)^2$, CPHC, University of Sunderland and University of Portsmouth
  - Now a measured criteria in BCS accreditation
- Cybersecurity in the business curriculum
- Masters programmes in Cybersecurity
- CPD for all – board room and all employees
- Supported by programme from Cybercrime Forensics SG

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Conclusions

- Cyber security is a domain of growing interest and influence across all of our lives
- Need to raise awareness
- New developments in quantum security
- There is a huge skills gap in cyber security locally, nationally and globally
- Education will become a key security strategy
- BCS Cybercrime Forensics SG will remain in the vanguard

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Thank you

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