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From commodity to true value How to give essence to IT audit today

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Lajos Antal
DCE Cyber Risk Service Lead Partner
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IT Auditing in the '90s

Pre-Internet era

- Either stand-alone systems or some connectivity, which were not equivalent to what we call “online” today
- All started way before - first known IT-based fraud in 1964 at Equity Funding Corporation of America.
- Collapse of the Barings Bank in 1995 - key characteristics:
 - some level of IT involvement
 - segregation of duties
 - lack of monitoring controls
- The Citibank “hack” in 1994 - 10M USD stolen by Vladimir Levin
- IT Auditing:
 - Auditing General Computer Controls
 - Access control reviews - standard Work Programs
 - “focused” - mostly servers

IT Auditing around Y2000

New approaches

- Pentesting - breaking into systems for fun and for profit
- False sense of security
 - protecting all computers in a network - X vulnerability + pwd crack
 - capturing network traffic in switched LAN
 - default passwords
 - capturing SSL network traffic in clear
- Conflicts: a series of controls operating effectively, lots of controls tests show controls matching best practices, yet the security-level is down.
- Key access controls focus on password controls, whilst successful attacks may not require passwords at all or obtain valid passwords in clear.

IT Auditing around Y2000

Web technologies

- Completely new type of vulnerabilities
 - (lack of) secure development
 - some standard and many unique development issues
- Webapp vulnerabilities
 - Are they scope of an IT audit?
 - Is it enough to check that certain apps/systems have been tested?
 - Scope/quality of testing + vendor selection (accreditation + staff limitation)

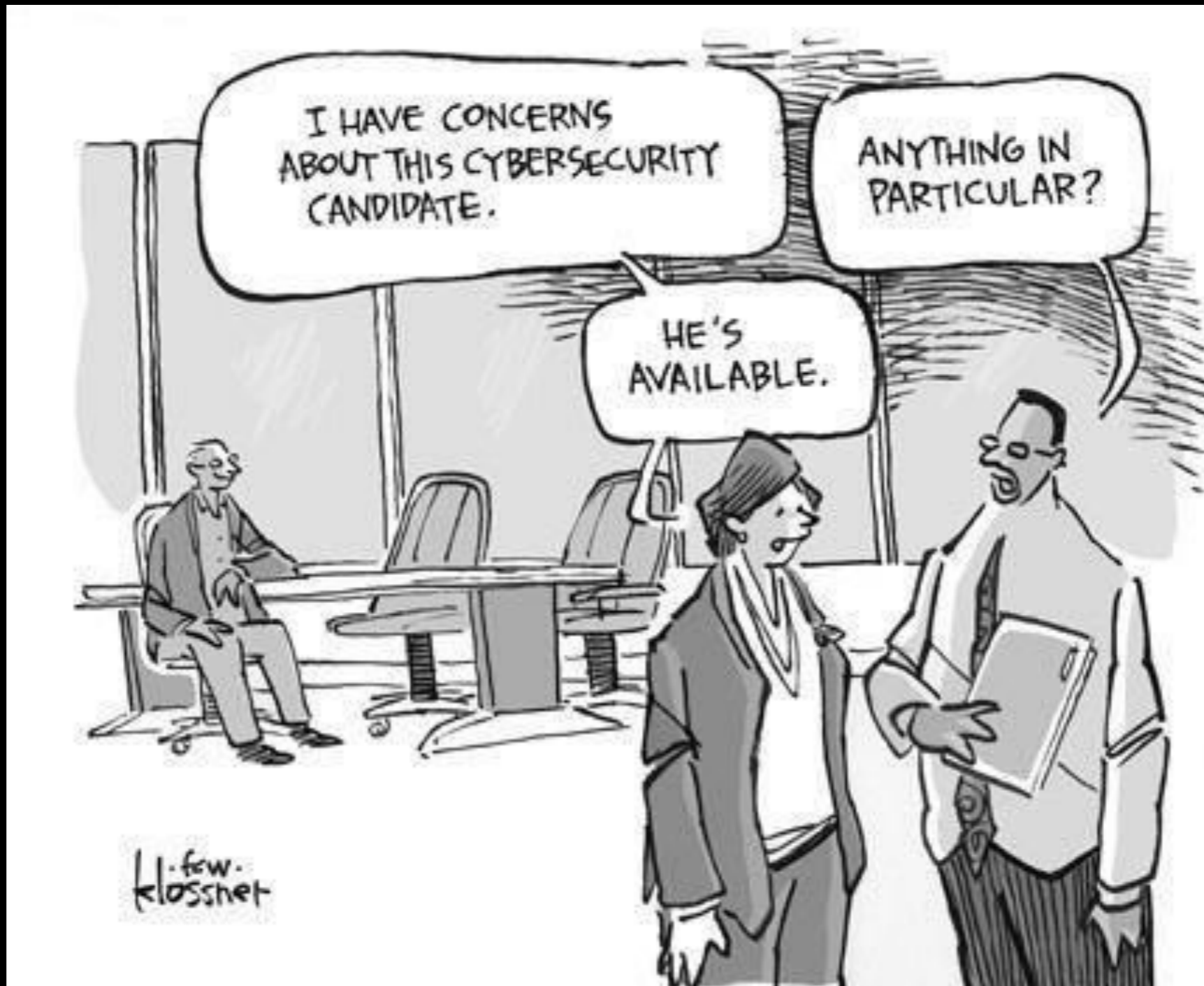
IT Auditing - recent years

The new and the very old technologies

- New technologies
 - Mobile (mainly Android and iOS)
 - Embedded systems
 - Infrastructure/facility protection - entry protections, CCTV, alarms, electricity, cooling
- Legacy systems
 - Mainframe systems
 - z/OS, z/TPS, OS2200 etc.
 - COBOL, PL/I, JES
- The untouched field
 - SCADA
 - Embedded systems

Almost completely out of the radar of IT audits.

Probably the biggest problem in Cyber Security



IT Auditing - nowadays

Purpose of IT audits - Risk mitigation

- Recent fraud types
 - spear phishing
 - custom malware
 - insider actions - e.g. kick-back, stealing
 - blackmailing
 - price fixing
 - over-pricing
- Things can also go wrong unintentionally



IT Auditing - nowadays

Purpose of IT audits - Risk mitigation

- Operate with simple questions, e.g.:
 - How does this application authenticate users?
 - What makes the authorisation decision when such transaction is initiated?
- Be sceptical
- Test the quality of works: security tests, UAT
- Verify the acceptance of works performed
- Test ad-hoc - anytime, anywhere
- Exercise
- Be prepared - at some point, someone might fail
- Know your enemy - threat assessment

Thanks for listening

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