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# LEGAL ASPECTS OF INFORMATION SECURITY

## IFS4101

WEEK 9, WELLY TANTONO, DIS, SOC, NUS

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# ELECTRONIC EVIDENCE AND DISCOVERY

# ELECTRONIC EVIDENCE

- Rules of Evidence
  - Relevance of evidence
  - Role of the judge
  - Form of evidence
- What is electronic evidence?
  - Rule against hearsay
  - Negative hearsay
  - Hearsay exceptions
  - Authentication
  - Best evidence rule
- Electronic discovery

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## CASE STUDY #I

## CASE STUDY #I

- V parked his van by the side of the road and went into a building.
- V returned to the spot where he last saw his van. It is no longer there.
- He immediately makes a police report using his mobile phone.

## CASE STUDY #I

- A was driving a van along the Causeway.
- A customs officer ran his plate number against a registry of stolen vehicles as part of the usual protocol.
- The van's plate number matches the plate number of V's van which was entered into the electronic registry following V's police report.
- The customs officer pulls over A's van.
- The customs officer notices that A was extremely nervous and became suspicious.

## CASE STUDY #I

- The customs officer used an 'electronic sniffer' – a high-tech gadget which can even detect the most minute part of drugs and explosives – to sniff the interior of the van.
- The sniffer indicates that there is a stash of contraband under the front passenger seat.
- The officers inspecting the van retrieved what looked to be a bag of ecstasy tablets from under said seat.
- They arrested A and seized the bag of tablets.
- The tablets were sent to the Department of Scientific Studies ("DSS") (now Health Sciences Authority ("HSA")) for analysis.
- The results came back positive, indicating that the tablets were MDMA (ecstasy tablets) and A had 30.585 grammes of tablets in his possession at the time of the arrest.

## CASE STUDY #1: EXAMPLES OF ELECTRONIC EVIDENCE

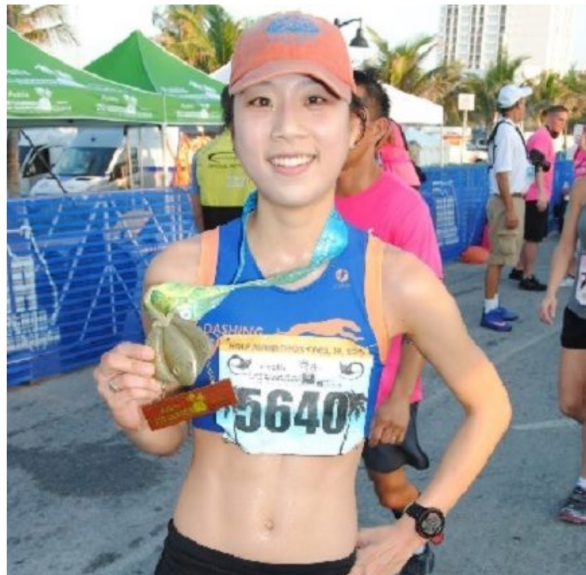
- Vehicle reported as being stolen (Evidence #1)
  - Mobile phone data capturing time that report was filed
  - SPF hotline entering the reported case into the SPF electronic report database
- Vehicle suspected of being stolen was found (Evidence #2)
  - Electronic registry of reported stolen vehicles confirm that the van was stolen
- Suspected to contain drugs (Evidence #3)
  - Electronic sniffer able to detect presence of drugs
- Composition and quantity of drugs (Evidence #4)
  - Gas chromatograph mass spectrometer (GCMS) identifies and measures quantity of drugs



## New York Food Blogger Exposed For Cheating in Half Marathon to Win Second Place



BY RYAN GENERAL · FEBRUARY 23, 2017 · 68 SHARES · 2 MINUTE READ



## CASE STUDY #2

## CASE STUDY #2

- NY food writer and runner claimed 2nd place at half marathon
- Runner was challenged; posted run times from Garmin fitness tracker online
- Sleuth examined evidence of distance, heartbeat etc.; argued they were more consistent with biking times
- Sought enlarged copy of photo with runner receiving prize; Garmin watch showed a shorter run – evidence that runner had cut the course
- Runner posted admission that she had cheated and covered up the cheat by biking the course again and posting the new times
- Runner stripped of 2nd place finish and banned

## WHAT ARE THE ISSUES WITH EVIDENCE?

Characteristics	Issue
Reliability	Are computer records reliable?
Accuracy	Are computer records accurate?
Authenticity	Can't electronic evidence be tampered with? Is this the "original" version of the evidence?
Veracity	Isn't electronic evidence hearsay evidence?

The use and admissibility of electronic evidence will give rise to all these issues!

## CASE STUDY #1: ISSUES WITH EVIDENCE

Evidence	Issues
<ul style="list-style-type: none"><li>Vehicle reported as being stolen (Evidence #1)<ul style="list-style-type: none"><li>Mobile phone data capturing time that report was filed</li><li>SPF hotline entered the reported case into electronic database</li></ul></li></ul>	<ul style="list-style-type: none"><li>Is the electronic report authenticated?</li><li>Are you sure the report was real? It wasn't a prank?</li></ul>
<ul style="list-style-type: none"><li>Vehicle suspected of being stolen was found (Evidence #2)<ul style="list-style-type: none"><li>Electronic registry of reported stolen vehicles confirm van was stolen</li></ul></li></ul>	<ul style="list-style-type: none"><li>Are the records accurate?</li><li>Did the customs officers have first-hand knowledge that the van was stolen?</li></ul>
<ul style="list-style-type: none"><li>Suspected to contain drugs (Evidence #3)<ul style="list-style-type: none"><li>Electronic sniffer able to detect presence of drugs</li></ul></li></ul>	<ul style="list-style-type: none"><li>Is the sniffer reliable?</li><li>Was it properly calibrated?</li></ul>
<ul style="list-style-type: none"><li>Composition and quantity of drugs (Evidence #4)<ul style="list-style-type: none"><li>Gas chromatograph mass spectrometer (GCMS) identifies and measures quantity of drugs</li></ul></li></ul>	<ul style="list-style-type: none"><li>How did the HSA determine the drugs were ecstasy?</li><li>Is the quantity accurate?</li></ul>

evidence is important for the facts of the case


# WHAT IS EVIDENCE?

Things that we produce in court to prove (or disprove) facts in issue or relevant facts


- e.g., murder – sections 299, 300(a) Penal Code
- “Whoever causes death by doing an act with the intention of causing death ... [and] the act by which the death is caused is done with the intention of causing death”
- *Actus reus* (fact in issue) in a murder case requires the following proof:
  - Act ... causing death [of a person]
    - Murder weapon
    - Body of victim
- *Mens rea* (fact in issue) requires the following proof
  - Intention of causing death
    - Things said or done before (motive) or after (getaway, covering up) as relevant facts

## DIRECT VS. INDIRECT EVIDENCE

Things to be proven can be proven directly (or indirectly) by other facts:

- e.g. Sunny Ang v PP [1967] 2 MLJ 195 – where neither the weapon nor the body were found
- evidence: A persuaded V to do diving at Sisters' Islands, knowing that V was poor swimmer; V's insurance policies with A as beneficiary; V drew up will in favour of A's mother, whom V has not met; A was not worried when V did not surface; A claimed against policies within 24 hours
- A was convicted of murder of V by  circumstantial evidence

# RELEVANCE & ADMISSIBILITY

- “relevant” (logical relevance)
  - "evidence is 'relevant' if it is logically probative or disapprobative of some matter which requires proof": DPP v Killbourne [1973] AC 729 per Lord Simon
- “admissible”
  - rules of evidence that determine what relevant evidence may or may not be tendered in a court
- e.g.  nilar fact evidence is logically probative but inadmissible: Makin v AG for NSW [1894] AC 57

# EVIDENCE & LEGAL REFORM

- Indian Evidence Act (1872)
  - Sir James Fitzjames Stephen
- Amendments to the Evidence Act (1996)
  - admissibility of computer output & copies of computer output
- Amendments to the Criminal Procedure Code (1996)
  - live video links
- Changes to the Rules of Court (1996 etc)
  - Technology Court
  - Electronic Filing System
- Technology specific legislation - Electronic Transactions Act (1998)
  - Legal recognition for electronic signatures, electronic records
- Amendments to the Rules of Court for Electronic Discovery (2011)
- Amendments to the Evidence Act (2012)
  - Admissibility of computer output
  - Admissibility of hearsay evidence



## LOGICAL VS. LEGAL RELEVANCE

- “relevant” (legal relevance)
  - S 3(2), Evidence Act: One fact is said to be relevant to another when the one is connected with the other in any of the ways referred to in the provisions of this Act relating to the relevancy of facts.
- “fused” logical relevance and admissibility rules – described as “legal relevance”
  - Singapore's evidence rules are inclusionary
  - cf. common law evidence rules (admissibility) are exclusionary

# FUSED LOGICAL AND LEGAL RELEVANCY RULES

## **Rules of Relevance in the Evidence Act**

- existence or non-existence of facts in issue and relevant facts: s 5
- facts forming part of same transaction as fact in issue: s 6
- facts which are occasion, cause or effect of facts in issue or relevant facts: s 7
- facts which show or constitute motive or preparation for any fact in issue or relevant fact, and previous or subsequent conduct, influenced or is influenced by any fact in issue or relevant fact: s 8
- facts necessary to explain or introduce relevant facts: s 9
- things said or done by conspirator in reference to common design: s 10

## FUSED LOGICAL AND LEGAL RELEVANCY RULES

- facts inconsistent with any fact in issue or relevant fact, or by themselves or in connection with other facts, make existence or non-existence of any fact in issue or relevant fact highly probable or improbable: s 11
- facts to enable court to determine amount of damages: s 12
- facts as to existence of any right or custom: s 13
- facts showing existence of any state of mind or body or bodily feeling when such state of mind or body or bodily feeling is in issue or relevant: s 14
- fact that act formed part of a series of similar occurrences, as to question of whether the act was accidental or intentional or done with a particular knowledge or intention: s 15
- existence of any course of business according to which acts would naturally have been done, as to whether act was done: s 16

# FUSED LOGICAL AND LEGAL RELEVANCY RULES

Practical effect:

- identify evidence: facts as being “logically” relevant to a fact in issue or relevant
- fit “relevant” facts into one of the rules in the Evidence Act, ss 5-16
- evidence would be “admissible” (legally relevant) under the Evidence Act

Singapore - inclusionary means that all evidence cannot be admitted unless they fall into the categories

## ROLE OF THE JUDGE

- In the past, rules of evidence help to separate between role of jury (as trier of fact) and role of judge (as trier of law – who applies facts found to make legal decisions)
- Jury trials abolished in 1969
- Judge today is trier of fact and law
- Rules of evidence help to clarify legal thinking, crystalize factual reasoning processes, avoid reasoning pitfalls
- Court has ultimate discretion to exclude evidence for additional reasons e.g. unlawfully obtained evidence

# FORM OF EVIDENCE

- Documents
- Oral testimony
- Real evidence

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# WHAT IS ELECTRONIC EVIDENCE?

# RULES FOR ADMITTING ELECTRONIC EVIDENCE (PRE-2012)

- Recognising electronic records in law
  - definitions of “computer output”, “electronic record”
  - “computer output” as equivalent to physical records
- Admitting such records in court
  - “computer output” as evidence
  - ways of admitting computer output
- Judicial assessment of records
  - definitions of “electronic signature”, “digital signature”
  - authenticating computer output
  - assessment of weight to be given to such output



## STATUTORY DEFINITION #1 (PRE-2012)

“Computer” – s 3(1), Evidence Act:

“computer” means an electronic, magnetic, optical, electrochemical, or other data processing device, or a group of such interconnected or related devices, performing logical, arithmetic or storage functions, and includes any data storage facility or communications facility directly related to or operating in conjunction with such device or group of such interconnected or related devices, but does not include —

- (a) an automated typewriter or typesetter;
- (b) a portable hand held calculator;
- (c) a device similar to those referred to in paragraphs (a) and (b) which is non-programmable or which does not contain any data storage facility;
- (d) such other device as the Minister may by notification prescribe;

## STATUTORY DEFINITION #2 (PRE-2012)


- Definition of computer includes:
  - Computing devices
  - Electronic devices with microprocessors/microcontrollers
  - Computer networks
- “Computer output” – s 3(1), Evidence Act:
  - “computer output” or “output” means a statement or representation (whether in audio, visual, graphical, multi-media, printed, pictorial, written or any other form) –
    - (a) produced by a computer; or
    - (b) accurately translated from a statement or representation so produced;

# COMPUTER OUTPUT

- Almost any form made by or derived from any computing device is “computer output”
  - breadth of definition of “computer”
  - “whether in audio, visual, graphical, multi-media, printed, pictorial, written or any other form”
- e.g. computer media such as RAM, ROM, hard-disk, floppies, tape, monitor, CD-ROM, CD-R, WORM
- e.g. sound recordings such as CD-As, MP3s
- e.g. video recordings such as VCDs, DVDs
- e.g. printouts or displays from computers such as transaction slips, computerised bank statements, screen captures

## ADMITTING ELECTRONIC EVIDENCE (POST-2012)

- Removed references to “computer” and “computer output”
- Replaced it with “electronic record”
  - “electronic record” means a record generated, communicated, received or stored by electronic, magnetic, optical or other means in an information system or transmitted from one information system to another;
- Move towards “technology neutral” definitions: *form of evidence as electronic or otherwise should not matter*
- Question: Is an electronic record a “document”? No – it can be documentary or **real evidence**

 electronic records can also be derived evidence - which usually is evidence understood by humans

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## HEARSAY EVIDENCE

## ILLUSTRATION OF THE RULE

*Subramaniam v PP* [1956] 1 WLR 965

- Facts:
  - A was found, injured, in Malayan jungle, carrying ammunition
  - A charged with possession of ammunition
- Defence:
  - A acted under duress at all material times because he had been captured by terrorists
- Evidence:
  - A testified he was accosted by three Chinese terrorists and made to follow them to their training camp
  - A proceeded to describe his conversation with the terrorists
  - A's testimony was disallowed by trial judge as hearsay, because the terrorists were not called to give evidence

## ILLUSTRATION OF THE RULE

*Subramaniam v PP* [1956] 1 WLR 965


- Held (on appeal to the Privy Council):
- “Evidence of a statement made to a witness by a person who is not himself called as a witness may or may not be hearsay. It is hearsay and inadmissible when the object of the evidence is to establish the truth of what is contained in the statement. It is not hearsay and is admissible when it is proposed to establish by the evidence, not the truth of the statement, but the fact that it was made.”
- The fact that the statement was made is relevant in considering the mental state and conduct thereafter of the witness or of some other person in whose presence the statement was made.

## RECAP

- Statement: Terrorists said, “We will kill you if you do not carry our ammo.”
  - To prove: that terrorists said that they will kill A.
  - Statement as evidence of *assertion by terrorists* (not called to testify)
  - Statement is hearsay (human assertion that cannot be challenged)
- Statement: Terrorists said, “We will kill you if you do not carry our ammo.”
  - To prove: A was so scared (mental state) that he carried their ammo.
  - Statement as evidence of “facts which show ... previous ... conduct [which] influenced any fact in issue”: s 8
  - Statement is *not* hearsay



## RULE AGAINST HEARSAY

- Cross and Tapper on Evidence, (8th ed, 1995), 46
  - “An *assertion* other than one made by a person while giving oral evidence in the proceedings is inadmissible as evidence of any fact stated.”
  - assertion: information intended by person to be conveyed to the recipient
-  was charged with murdering V. V's mother sought to give evidence that V had called her and told her, i.e. V's mother, that A had abandoned her but was coming to pick her up.
  - to prove that A had abandoned V but was coming to pick her up, the assertion made by V out of the court proceeding (since she is dead and unable to give oral evidence) is hearsay

## OTHER ILLUSTRATIONS

- Assume V is dead and left a will that leaves \$1 million to her godson. However, she never specified who is meant to be her godson.
- A wants to claim under V's will as V's godson. A wants to give evidence that V was heard calling A "my godson".
  - to prove that V treated A as "my grandson", V's assertion is hearsay and inadmissible
- As above, but A wanted to give evidence in the form of an Ang Pow from V during Chinese New Year with the words "to my godson".
  - V's assertion (the words "to my godson") is hearsay
  - cf. V's Ang Pow with the words is real evidence
- As above, but A wanted to tender in evidence a Facebook video posting of Chinese New Year festivities where he was seen warmly greeting V as "my godma" and receiving V's greeting "my godson".
  - V's greeting identifying A as "my godson" is hearsay
  - cf. A and V's exchange of greetings are not assertions

## NEGATIVE HEARSAY

- Drawing inferences from the absence of evidence – typically absence of records to infer converse situation
- Example: No records indicating that X had voted in 2011 elections -> X had not voted in 2011 elections
- Question: What are the difficulties of dealing with the admissibility of “negative hearsay”?

## *ROY S SELVARAJAH V PP [1998] 3 SGHC 272*


- A charged with offence of intentionally abetting PW10 to remain in Singapore unlawfully after expiry of social visit pass
- Immigration Department had destroyed its physical records of PW10's employment/visit passes, and all records were in the computer
- PW1 testified, after checking computer records: PW10 did not extend her social visit pass
- PW2 testified, after checking computer records: letter terminating employment pass sent
- Evidence of PW1 and PW2 accepted under s 380, CPC (multiple hearsay documents) - A convicted

*ROY S SELVARAJAH*  
*V PP [1998] 3*  
*SGHC 272*

What happened?

- A charged with offence of intentionally abetting PW10 to remain in Singapore unlawfully after expiry of social visit pass
- Immigration Department had destroyed its physical records of PW10's employment/visit passes, and all records were in the computer
- PW1 testified, after checking computer records: PW10 did not extend her social visit pass
- PW2 testified, after checking computer records: letter terminating employment pass sent
- Evidence of PW1 and PW2 accepted under s 380, CPC (multiple hearsay documents) - A convicted

## ROY S SELVARAJAH V PP [1998] 3 SGHC 272

- Two facts to be proven:
  - PW10's social visit pass terminated – fact 1
  - letter terminating PW10's employment pass sent – fact 2
  - database in question was not tendered in evidence
  - oral evidence of managers as to above admitted
- Question  What are the challenges that could be mounted against the evidence in *Selvarajah*?
  - How do we show facts 1 and 2 from database?
  - Is there an entry in the database as to termination, or the absence of an entry for extension?
  - What IS issues will be raised in both cases?

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## REAL EVIDENCE VS. HEARSAY

## REAL EVIDENCE VS. HEARSAY

- Hearsay rule
  - Exclusionary rule that excludes statements made by persons who are not called as witnesses
- *Subramaniam v PP*
  - the evidence of a statement to a witness by a person who is not called as a witness is not hearsay and is admissible when it is proposed to establish by evidence not the truth of the statement, but the fact that it was made
- Question: What is the purpose or objective behind the hearsay rule?



## REAL EVIDENCE VS. HEARSAY

- As records that qualify as hearsay exceptions
  - E.g. **business records** show that A owes B \$1000
- As processed results (“real evidence”)
  - E.g., printout shows that X weighs 1000 kg
- Distinguishing between computer records as hearsay and records as original/real evidence

## CASTLE V CROSS [1985] 1 ALL ER 87

- Facts:
  - A charged with failing to provide sufficient breath for alcohol analysis
- Evidence (prosecution):
  - printout from Intoximeter 3000
  - printout reads “One no sample”
- Held:
  - printout admissible as real evidence
  - no different from output from mechanical device
  - computer used as a tool
  - no evidence that it was defective

## CASTLE V CROSS [1985] 1 ALL ER 87


- Facts:
  - A was charged with drug trafficking.
- Evidence (prosecution): (to prove weight of drug)
  - chromatographs (HPLC)
  - spectrographs (GCMS)
  - oral testimony of technicians
- Held
  - HPLC & GCMS admissible as real evidence

- step 1: it is hearsay as it is a statement completely made out of court
- 2: this is a business record, which is an exception to hearsay
- 3: but this business record is not complete, as it is an abstract - which is derived business record
- 4: thus this does not meet the standard of being a business record

## AW KEW LIM V PP [1987] SGHC 33

- Facts:
  - A1 to A6 were charged with possession of pirated gramophone records
- Evidence (prosecution): (to prove A1 to A6 were owners of raided shop)
  - computer printout from Registry of Companies
  - printout initialed by unidentified person “for Registrar of Companies and Businesses”
- Printout has
  - name of firm
  - principal place of business
  - date of registration
  - activities
  - names and addresses of the partners and manager and dates of their appointment and withdrawal etc
- Held:
  - Printout inadmissible hearsay: contained abstracts from documents filed with Registry

## REAL EVIDENCE VS HEARSAY

- Desirable to have electronic evidence admitted as real evidence
  - Note purposes to which evidence is used
- Question  What can we do to facilitate the admissibility of electronic evidence as real evidence?

# SUMMARY OF HEARSAY EVIDENCE

- Evidence that constitutes an (i) **out of court statement**; (ii) made by **a witness who cannot be in court**; and (iii) is being admitted **to prove the truth of the content of that statement**
- Computer data that is **created by the machine and not by a human being will not be caught under the hearsay rule** (because it was not made by a witness out of court)
- Don't get bogged down by whether a piece of evidence is hearsay. In the case of Singapore, you must first figure out if a piece of evidence is **relevant**. That means:
  - Is it necessary to explain or introduce a fact to establish time, identity, what happened? Section 5 of the Evidence Act
  - Is it so connected with the primary facts that they are part of the same transaction? Section 6 of the Evidence Act
  - Does this piece of evidence explain the cause and effect of what happened? Section 7 of the Evidence Act
  - Does it explain the motivations behind the actors? Section 8 of the Evidence Act
  - Is it necessary to explain the facts? Section 9 of the Evidence Act. This is the Authentication Rule (we'll talk about this later)

## SUMMARY OF HEARSAY EVIDENCE

- Does the evidence establish a common intention or some form of conspiracy? Section 10 of the Evidence Act
- Does a fact that, standing alone, would've been irrelevant, help to debunk some other facts that were previously presented? Section 11 of the Evidence Act
- Does the fact help to determine damages? Section 12 of the Evidence Act
- Does the fact relate to a right or custom that can help shed light on some other facts? Section 13 of the Evidence Act
- Does the evidence show the existence of a state of mind or body or bodily feeling? Section 14 of the Evidence Act
- Does the evidence help shed light on whether something was done by accident or with intent? Section 15 of the Evidence Act
- Is it being used to demonstrate things that would have been ordinarily done in the course of business? Section 16 of the Evidence Act

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## EXCEPTIONS TO HEARSAY RULE



# HEARSAY EXCEPTIONS

- Question: Why is hearsay admitted in evidence (nonetheless)?
- Main hearsay exceptions
  - Business records (statements of relevant facts made in course of trade, business, profession etc., including multiple hearsay) – s 32(1)(b)
  - Records made against interest of maker – s 32(1)(c)
  - Records made by person who is dead or who cannot be produced as witness – s 32(1)(j)
  - Records admitted by agreement – s 32(1)(k)

## HEARSAY EXCEPTIONS

### *GIMPEX V UNITY HOLDINGS* [2015] SGCA 8

- D sought to admit Sucofindo Report in claim against P that shipped coal is of correct quality
- D's witness could not testify as to truth of contents of Report because he was not personally involved in entire process of sampling, testing and loading of coal, and had no first-hand knowledge
- Report was hearsay but admissible under s 32(1)(b)(iv) as a "document constituting, or forming part of, the records ... of a trade, business ... that are recorded, owned or kept by any person carrying out the trade [etc.]"
- Report was not admissible under s 32(1)(j) because D failed to show that it was not practicable to secure attendance of Report authors
- Court however exercised discretion to exclude admissible hearsay Report under s 32(3) because there were serious issues regarding the reliability of Report
- P's reports were admitted via s 32(1)(j)(iv) but given less weight: s 32(5)

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## ADMITTING COMPUTER OUTPUT (POST-2012)

## ASSESSING THE PRE-2012 REGIME

- Over- and under-inclusiveness of conditional admissibility regime of ss 35, 36
- Principle of Equivalence
- Technology Neutrality
- Malleability of Rules of Evidence
- Authentication Rules
- Authentication Presumptions

## AUTHENTICATION RULES

- Facts necessary to explain or introduce relevant facts
- s 9. Facts necessary to explain or introduce a fact in issue or relevant fact, or which support or rebut an inference suggested by a fact in issue or relevant fact, or which establish the identity of any thing or person whose identity is relevant, or fix the time or place at which any fact in issue or relevant fact happened or which show the relation of parties by whom any such fact was transacted, are relevant in so far as they are necessary for that purpose.

# AUTHENTICATION RULES

- Illustrations
- (g) A seeks to adduce evidence against B in the form of an electronic record. The method and manner in which the electronic record was (properly or improperly) generated, communicated, received or stored (by A or B), the reliability of the devices and the circumstances in which the devices were (properly or improperly) used or operated to generate, communicate, receive or store the electronic record, may be relevant facts (if the contents are relevant) as authenticating the electronic record and therefore as explaining or introducing the electronic record, or identifying it as the relevant electronic record to support a finding that the record is, or is not, what its proponent A claims.

All the paper procedures must be in place to ensure that the computer or data is stored well, protected well, standards adopted, system reliable, enforcement in terms of how systems used process followed  
- all this will be crucial in helping to determine if the piece of evidence can be submitted to court

## APPLICATION

### *MITFAM INTERNATIONAL V MOTLEY RESOURCES* [2013] SGHC 270

- Facts:
  - P sued D for sum due (US\$400k) for trading in cashew nuts. D counterclaimed, contending that it could set off sum due against advance payments (US\$486k) that D made to P for cashew nuts.
  - D tendered in evidence electronic ledger of these advances.
  - P disputed ledger, contending that Ds' payments were to reimburse P for advance payments that P had made on behalf of D

## APPLICATION

### *MITFAM INTERNATIONAL V MOTLEY RESOURCES* [2013] SGHC 270

- Facts:
  - D failed to call as witnesses persons who maintained D's electronic ledger.
  - No evidence that ledger was not altered or entries had not been adjusted.
  - No assurance as to integrity of information in ledger.
  - Ledger not admitted in evidence (under s 10(1)(a), Electronic Transactions Act)



## APPLICATION

### *MITFAM INTERNATIONAL V MOTLEY RESOURCES* [2013] SGHC 270

- Analysis: ledger admitted to prove several things:
  - sums were paid by D to P (not disputed)
  - sums were paid by D as **advance payments** to P (disputed)
- Nature of payments is something not intrinsic to ledger: hearsay
- So two sets of legal rules triggered:
  - Is electronic ledger an authentic ledger?
  - If so, is ledger used as hearsay, and admissible via exception?

# AUTHENTICATION PRESUMPTIONS

- Presumptions in relation to electronic records
- 116A.—(1) Unless evidence sufficient to raise doubt about the presumption is adduced, where a device or process is one that, or is of a kind that, if properly used, ordinarily produces or accurately communicates an electronic record, the court shall presume that in producing or communicating that electronic record on the occasion in question, the device or process produced or accurately communicated the electronic record.
- **Illustration**
- *A seeks to adduce evidence in the form of an electronic record or document produced by an electronic device or process. A proves that the electronic device or process in question is one that, or is of a kind that, if properly used, ordinarily produces that electronic record or document. This is a relevant fact for the court to presume that in producing the electronic record or document on the occasion in question, the electronic device or process produced the electronic record or document which A seeks to adduce.*

thus this allows for the presumptions to be challenged

## AUTHENTICATION PRESUMPTIONS

- (2) Unless evidence to the contrary is adduced, the court shall presume that any electronic record generated, recorded or stored is authentic if it is established that the electronic record was generated, recorded or stored in the usual and ordinary course of business by a person who was not a party to the proceedings on the occasion in question and who did not generate, record or store it under the control of the party seeking to introduce the electronic record.
- **Illustration**
- *A seeks to adduce evidence against B in the form of an electronic record. The fact that the electronic record was generated, recorded or stored in the usual and ordinary course of business by C, a neutral third party, is a relevant fact for the court to presume that the electronic record is authentic.*

## AUTHENTICATION PRESUMPTIONS

- (3) Unless evidence to the contrary is adduced, where an electronic record was generated, recorded or stored by a party who is adverse in interest to the party seeking to adduce the evidence, the court shall presume that the electronic record is authentic in relation to the authentication issues arising from the generation, recording or storage of that electronic record.
- **Illustration**
- *A seeks to adduce evidence against B in the form of an electronic record. The fact that the electronic record was generated, recorded or stored by B, who opposes the relevance of the evidence, is a relevant fact for the court to presume that the electronic record is authentic.*

## APPLICATION

### *TELEMEDIA PACIFIC V CREDIT AGRICOLE* [2015] SGHC 235

- Facts:

- P company was customer of D bank. P's director was inserted as unauthorized signatory of P's account. P sought to hold D liable for unauthorized transfers. D would escape liability if D showed that transaction advices were issued and dispatched to P.
- D sought to prove issuance of transaction devices by electronic records generated by its mailing system. Evidence tendered of how D would generate (electronic evidence), pack and send monthly statements to a third party T (Datapost), which would in turn package and send out the statements.

## APPLICATION

### *TELEMEDIA PACIFIC V CREDIT AGRICOLE* [2015] SGHC 235

- Held:
  - s 116A presumption triggered – D's director was not a programmer/engineer, but had testified that D's system for generating statements and envelopes (and that both tallied) was working properly – had "ordinary produced and accurately communicated" information of transactions by D's customers – see [255].
  - So assumed P received the statements; P lost.
- Question: P's counsel did not challenge director's evidence correctly. How would you as an IS professional challenge his evidence?

although the assumptions can exist, there are too many instances nowadays where there are a lot of data entry/access control where other people can come in to make changes


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- and the process can be questioned which should be targeted at the points where humans can intervene which will then disrupt how the machines will run (unaffected)

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## BEST EVIDENCE RULE

## SECONDARY EVIDENCE

- General rule (“original evidence rule”):
  - court only accepts primary evidence of a document (“the original”)
  - court accepts secondary evidence (“the copy”) only if the failure to produce the original is satisfactorily explained
- (Pre-2012 situation) “Computer output”:
  - the “original evidence rule” is not applicable: s 35(10)(b)
  - as long as output is admitted, there is no need to show that it is not a copy
- Question  why is the concept of “best evidence” for electronic evidence a difficult one?



one example can be the information from a company database - which they use to create an invoice for the customer

so the source of truth cannot just be the invoice which belongs to the customer

BUT the database should not be considered as reliable evidence since when the information is required in the court, it will be generated again (AFTER THE ACTUAL INCIDENT)

## POST-2012 BEST EVIDENCE RULE

- Flexible approach to admitting “secondary” evidence of electronic evidence
  - Primary evidence
    - 64. Primary evidence means the document itself produced for the inspection of the court.
    - Explanation 3.—Notwithstanding 2, if a copy of a document in the form of an electronic record is shown to reflect that document accurately, then the copy is primary evidence.
  - **Illustrations**
    - (a) An **electronic record**, which has been manifestly or consistently acted on, relied upon, or used as the information recorded or stored on the computer system (the document), is primary evidence of that document.
    - (b) If the electronic record has not been manifestly or consistently acted on, relied upon, or used as a record of the information in the document, the electronic record may be a copy of the document and treated as secondary evidence of that document.

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# ELECTRONIC DISCOVERY



## WHAT IS E-DISCOVERY?

- “Electronic discovery (or e-discovery or e-discovery) refers to discovery in litigation or government investigations which deals with the exchange of information in electronic format (ESI). These data are subject to local rules and agreed-upon processes, and are often reviewed for privilege and relevance before being turned over to opposing counsel.
- Data are identified as potentially relevant by attorneys and placed on legal hold. Evidence is then extracted and analysed using digital forensic procedures, and is reviewed using a document review platform. A document review platform is useful for its ability to aggregate and search large quantities of ESI.”

## WHAT IS E-DISCOVERY?

- “Electronic information is considered different from paper information because of its intangible form, volume, transience and persistence. Electronic information is usually accompanied by metadata that is not found in paper documents and that can play an important part as evidence (for example the date and time a document was written could be useful in a copyright case). The preservation of metadata from electronic documents creates special challenges to prevent spoliation.”

# ELECTRONIC DISCOVERY IN SINGAPORE

- Supreme Court Practice Directions, Part V, para. 45: parties to agree to “electronic discovery plans”
  - scope/limit on documents in discovery
  - voluntary disclosures
  - specific preservation of specific documents,
  - search terms to be used
  - preliminary searches/data sampling
  - discovery in stages
  - format and manner of supply of copies
- para 46: Discoverable internally-stored meta data
- paras 47/48: Requesting for documents pursuant to
- “reasonable search” requests to specify repositories and period of search; subject to proportionality and economy rules

## ELECTRONIC DISCOVERY IN SINGAPORE (NUMEROUS ISSUES AND OPPORTUNITIES)

- How to properly validate documents for relevant and privileged communications?
  - suggestion: use addressee information to filter out e.g. law firm's email addresses, lawyer's name
  - problem: keyword search may be over- and underinclusive: may exclude vital communications, or be exploited by party preventing discovery
  - shortcomings of keyword driven discovery
  - opportunities for Bayesian driven e-discovery through automated platforms (“predictive coding”=“); see *Pyrrho Investments v MWB Property* [2016] EWHC 256 (Ch)

# ELECTRONIC DISCOVERY IN SINGAPORE

- How to prevent documents from being tampered with (including their meta-information) or spoiled?
  - Integrity of document linked to its meta information – one cannot be altered without altering the other
  - Protection of company as party granting discovery e.g. expert for party seeking discovery may tamper with meta information
  - cf. appointment of "joint experts" in PD is a possible solution but practically infeasible
  - Technical implementations critical, but most platforms do not have that implementation

# ELECTRONIC DISCOVERY IN SINGAPORE

- How to segment discovery and inspection process from non- pertinent parts of electronic documentation from outsiders/competitors? [process/procedures under scrutiny](#)
  - Not just an access control issue
  - Currently limited sanctions for improperly conducting trawling searches
  - Party granting discovery to provide all reasonable access (but not actively facilitate!)
  - Conversely, party seeking discovery attempting to discover documents "hidden" by party granting discovery
- How to characterize electronic documentation so that compartmentalization is possible in the first place without hindering inter-department communications?



## ELECTRONIC DISCOVERY IN SINGAPORE

- "What if I deliberately hide or destroy e-documents that are adverse to my case?"
- O. 24, r. 16 – failure to make discovery or produce any document for inspection → court may “make such order as it thinks just including, in particular, an order that the action be dismissed or, as the case may be, an order that the defence be struck out and judgment be entered accordingly.”

# ELECTRONIC DISCOVERY IN SINGAPORE

- "What if the documents were not be found [initially] because they were are really inaccessible and were costly to reassemble and assess?"
  - O. 24, r. 8: duty to discover continues throughout proceedings
  - O. 24, r. 1: court order will decide apportionment of costs
  - O. 24, r. 16: if this is an intentional or reckless failure to comply with the requirement of discovery, adverse inferences can be drawn. See Perelman v Morgan Stanley litigation (VWSJ article).

# CONCLUSION

- Electronic evidence now treated almost on parity with physical evidence
    - Greater reliance on authentication rules
    - Common-sense application of authentication presumptions
    - Secondary evidence rules are of “secondary” importance
  - Electronic discovery rules relatively underdeveloped
    - More complex cases with voluminous and real-time electronic evidence may require revamp of rules to make them more equitable
- + the focus on the system themselves which generate the electronic evidence