

CE0001 Engineers & Society Chp1 The Engineer In Society

Date

No.

What are the core aspects of Engineering & Society

Core Aspects of Engineering & Society

- ↳ Definition on an Engineer
 - ↳ Engineers role in society
 - ↳ History of Engineering and the Profession
- Definition, Role, History

Who is the Engineer?

Definition of an Engineer

- ↳ Translates the ~~dreams~~ of humanity into action into action
 - ↳ Dreams of Humanity
 - ↳ Traditional knowledge
 - ↳ Concepts of Science
 - ↳ To achieve sustainable management of the planet through the
 - ↳ Creative application of Technology
- Dreams, Knowledge, Science Concepts

What is the definition of science?

Science Definition

- ↳ _____ about natural phenomena
- ↳ Well founded
- ↳ testable knowledge

What is the definition of technology?

Technology Definition

- ↳ ~~Systems~~ Systems concerned with _____
- ↳ Solving problems
- ↳ Meeting needs in the real world

What role does eng^{ee} play in society?

Engineers role in society

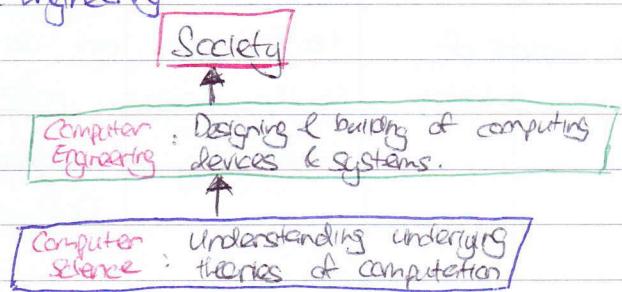
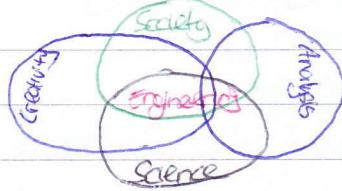
- | | | |
|---|-----|--|
| ↳ Engineers | vs. | Scientist |
| ↳ Connects pure science to society | | ↳ Develops knowledge and understanding of the universe. |
| ↳ Environment Engineers plan, design, build, manufacture, operate are dynamic and this has brought upon challenges and uncertainties. | | ↳ Pursuit of knowledge without concerns to the needs of society. |

- ↳ ~~Science~~ makes a better world possible. ~~Engineering~~ makes it a reality
- ↳ Scientist study the world as it is
- ↳ Engineers create the world that have never been.

2

✓
How does science & engineering correlate to the society?

Relation Between Science & Engineering



✓
What environments do engineers face?

Environment of Engineers

- ↳ Dynamic & Turbulent
- ↳ Fast changing & uncertain
- ↳ Complex with factors like ↳ No technology can make everything foolproof

- ↳ Political
↳ Economic
↳ Social-Cultural ↳ mindset of co-pilot who drove the plane into a mountain
↳ Technological
↳ Natural
- Can occur at the same time

↳ What example shows the advances in engineering?

History of Aerospace

- ↳ Orville and Wilbur Wright flew Wright Flyer I (1903) ↳ 104 yrs
- ↳ SIA flew A380 carrying 853 people with 15,300km range (2007)

Advances of Aerospace

- ↳ Navigation Technology ↳ Best angle & speed of approach to land
- ↳ Flight Monitoring Systems ↳ Detection of severe turbulence
- ↳ Engines
- ↳ Fuselage and seats ↳ Make crashes more survivable
- ↳ Today
 - ↳ In 2012, Flight risk stands at
 - ↳ 1 in 45 million flights
 - ↳ A traveller could travel 123,000 years before landing in such flights.

What are the breakdowns
in the history of
Engineering?

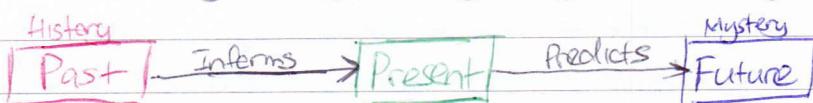
History of Engineering and the profession

- ↳ Importance of Engineering History
- ↳ Phases of Engineering History
- ↳ Development of the profession

W
Why Study the history
of Engineering?

Importance of Engineering History

- ↳ Understand why things happened
- ↳ Make sense of the present and the future } Denver Airport
- ↳ Understand connections between engineering & other aspects of
human society. ↳ when something happens, it affects all of us
 ↳ eg. Smoking, things we enjoy



Yesterday is History, Tomorrow is Mystery Today is a Gift,
that is why it is The Present

Focused on what were still functioning.
↳ 101 things can fail, so engineers
we must respond.

What are some examples
that display the importance
of Engineering History?

Examples

↳ ~~Apollo~~ Apollo 13 Moon Mission

↳ QF32

↳ Denver International Airport

14 Apr 1970

↳ 2 oxygen tanks exploded in orbit, cutting off essential supplies
↳ But both Astronauts & Ground Control focused on what were
still functioning and brought the spacecraft back to Earth

4 Nov 2010

↳ Engine exploded on flight from Singapore to Sydney
↳ The flight captain said, "Instead of trying to work out what has failed, we focused on what was still working? We were not scared, we were busy."
↳ Aircraft landed at 200m of 400m runway.

W
What facts and lessons
were learned from
DIA case study?

Denver International Airport (1994)

↳ Learned
↳ Dead on Arrival

↳ World's 1st Computerized automatic Baggage handling system.

↳ Kerbside to plane, plane to plane, & plane to luggage claim.

Facts

↳ World's fastest & most sophisticated system.

↳ Failed to open on 6th March 1994

↳ Took 10 years to make it right

Lessons

↳ No backup system

↳ Overwhelmed by enthusiasm ↳ Didn't deal with reality

↳ Barcode Readers & Computers were not up to the testings.

4

What are the phases in engineering history?

Phases of Engineering History

- ↳ Scientific Revolution (16th to Mid 18th cent.)
- ↳ Industrial Revolution (Mid 18th to mid 19th cent.)
- ↳ Modern Era (mid 19th to present)

→ Humans start to question & challenge problems
→ Shifting foundations of old order of society
→ Scientific Grounds
→ Machine Age. Machines making more machines
→ Technological Convergence. Std machine tools across industries.
↳ Translates science to engineering
→ Social & Economic factors drive technology
↳ development for modern living.
↳ Building the wants of people

What and when is the scientific revolution?

Scientific Revolution

- ↳ Rise of capitalism brought strong interests in the practice of trades.
- ↳ ~~Modern~~ Modern professionals such as civil, mining & mechanical engineering.
- ↳ In addition to intuition, practical thinking became scientific
- ↳ Engineering colleges, institutions & societies emerged.

What are some breakthroughs during the scientific revolution?

Examples

- ↳ promoted the development of science
→ the earth revolves around the sun.
- ↳ 1543, ~~Nicolaus~~ Nicolaus Copernicus proposed Heliocentric Theory
- ↳ 1564-1642, Galileo invented the telescope that supports Nicolaus Copernicus claim.
- ↳ 1662-1727, Isaac Newton took Galileo theory and formulated accurate models of the universe based on the Law of Universal Gravitation.

What is the Industrial revolution?

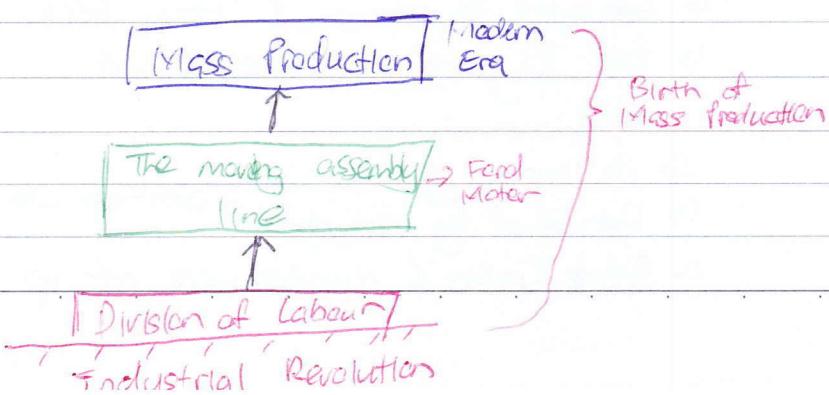
Industrial Revolution

- ↳ Industrial Engineers designed and managed mass production and distribution systems.
- ↳ Mass Production of things.
→ to produce things more efficiently
- ↳ Mass Production through division of labour
- ↳ ~~Replaced~~ Machines replaced animals and human power.
→ Design systems w/ desired behaviour
- ↳ Control Engineering accelerated the pace of automation.

How does division of labour revolutionize Industrial Revolution?

Division of labour (Adam Smith)

- ↳ 1 worker produced 10 pins per day. 10 workers = 100 pins per day
- ↳ Divided into 18 steps. 10 workers produced 48,000 pins per day



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Examples of Moving Assembly Line

↳ Ford Motor Co. set up 1st mass production car assembly line in 1913

↳ Each car ~~has~~ has 3000 parts assembled, through 84 ~~steps~~ distinct steps reducing ~~time~~ time from 12 hrs to 2 hrs.

N
what is the modern

Industrial Era?

Modern ~~Era~~ Industrial Era

↳ Large scale R&D organised at national level

↳ Maturing of graduate Education.

Examples

↳ Material Science & Engineering — Advanced materials with increased performance

↳ Aerospace Engineering — Conquered outer space

↳ Micro electronics, communications & computer engineering — kick start information revolution

CE0001 - Engineering Society

Chapter 2.1

Ethics in Engineering

What is engineering
ethics?

Engineering Ethics

- ↳ Consists social responsibilities and rights endorsed by engineers
- ↳ Desired ideals & personal commitment
- ↳ Concerned with decisions, policies & values that are
 - ↳ morally desirable in engineering practice & research

Moral vehicle → responsible
→ moral vehicle brings rights to safety
→ Jon socks → responsible
→ he took everyone to see it while
he ran away. responsible rights

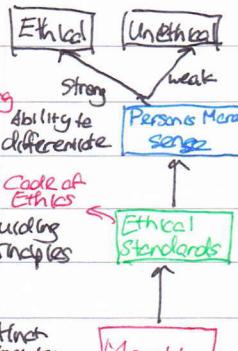
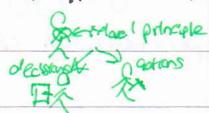
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Why study ethics?

Moral Autonomy

- Morality → Principles distinguishing right & wrong
- Moral Sense → Based on described & sound principles to distinct right & wrong
- ↳ Increase one's ability to deal with complex engineering issues
- ↳ Person's ~~ability~~ own moral principle to make decisions & actions
- ↳ Rather than what is imposed.



Example

- Pfizer → Promoted ~~drugs~~ for purposes not approved by American F.D.A.
- ↳ Over prescribe & selling even if not needed
 - ↳ fined US\$ 2.3 Billion

John Korchinsky → In army, I was expected to protect people at all costs

→ In Pfizer, I was expected to increase profits at all costs, even when sales meant endangering lives.

What skills for Moral Autonomy

Autonomy require?

- Moral Awareness - Recognizing moral problems & issues in engineering
- Cogent Moral Reasoning - Comprehending, clarifying & assessing arguments of opposing moral issues
- Moral Coherence - Consistent & comprehensive based on ~~all~~ relevant facts
- Moral Imagination - Alternative responses to moral issues and receptivity to creative solutions
- Moral Communication - Precision of a common ethical language to express moral views with others
- Moral Reasonableness - Willingness ~~not~~ to be able to reason moral issues
- Respect for people - Concern of others & own well-being
- Tolerance of Diversity - Acceptance and respect of reasonable differences
- Moral Hope - Appreciation of the possibilities
- Integrity - Upright, stand by Moral sense

What themes helps us to be guided by engineering ethics?

Themes in the study of engineering ethics

- Engineering projects are social experiments
 - ↳ generates new possibilities & risks
 - ↳ engineers share responsibilities for
 - ↳ creating benefit, preventing harm & pointing out dangers



Example

Titanic

- ↳ Failure to see it was an experiment
- ↳ Sink & killed 1,200 people
- ↳ Engineers were isolated

- Moral values permeate all aspects of technological development

Example

Genetically Modified (GM) Food

- ↳ consuming of such food could bring disaster

- Ethics & Excellence in engineering goes hand-in-hand

- ↳ as moral values permeate all aspects of technological development



- Personal meaning & commitment

Example

Artificial Lung

- ↳ Engineers were energized by recipients



- ↳ Intrinsic motivation

- ↳ matters significantly to engineering ethics

- ↳ principles of responsibility stated in code of ethics necessary for engineers

- Promoting Ethical conduct more important than punishment

Example

Chemical plant next to civilization.

- ↳ Union Carbide in Bhopal (Inseeticide)

- ↳ They wanted it cheap.

- ↳ The lives can't be brought back.



- Ethical dilemmas arise in engineering



- ↳ Moral values are infinite and can conflict

Example

↳ They were treated as 2 people

- ↳ Iron lung twins Lurd & Lurd

- ↳ Chairman of raffles hospital knew it was high.

- ↳ Dilemma arose during surgery.

- ↳ Wishes of twins were to be separated even in all conditions.

- Engineering ethics should explore both micro & macro issues

(Company)
(immediate)
Industry
(Overall)



Example

→ MH370

- ↳ Micro: Malaysian Airlines issue

- ↳ Macro: Airline industry issue

- ↳ That planes were not regularly tracked

- ↳ Now 15 mins check between flights

- Cautious Optimism



Example

Pessimists: Pollution, Depletion of resources
Nuclear war

- ↳ Optimism with caution

Optimists: High technologies
High perf materials

- ↳ Not living in the bubble world.

What defines a responsible professional & ethical corporation?

→ Responsibility & Accountability for meeting the obligations of the general public & ethical corporation!

What are the core elements of professionals?

Professional Core Elements

→ Advanced Expertise 

→ Self-regulation → Code of Conduct & Ethics 

→ Public Good → ~~Public Good~~ Key to achieve 

What are the characteristics of a professional?

→ Substantial Intellectual & Practical training 

→ Professional Legitimacy & Autonomy 

→ Trust relationship with client 

→ Regulatory duties & responsibilities
(Standards, competencies, Disciplines) 

Example (Unethical)

→ Intel 1994, flaws in new microprocessor

→ Intel knew but continued to sell, hoping to sell all before the public knew

→ Intel's response

↳ Most users would not notice it

↳ Only replaced when flaw could be demonstrated

↳ Finally forced to replace all chips

→ Creative Technology, Slim Weng Hoo

↳ Gave \$500,000 to staff who are to be laid off

↳ Plans to further assist staff

What are ethical dilemmas?

Ethical Dilemmas

→ Situations where moral reasons come into conflict 

→ Not clear what to be done 

→ Arise as moral values are many & varied 

→ Abstract

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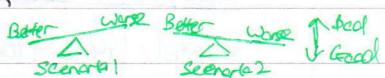
What are the steps to resolve ethical dilemmas?

- Resolving Ethical Dilemmas Steps
- Moral Clarity: Identify Moral Values
 - (What is right?) Both A: Life is sacred: wrong to take one right. B: Human rights view: should be allowed to choose.
 - Conceptual Clarity: Clarify key Concepts
 - (What does it mean?) A: Family suffers as Tony suffers
B: What basis permit premature ending of life?
↳ Right to die might become "duty to die"
↳ Opening an undefendable position
 - Informed about the facts: Obtain relevant information
 - (What are the facts?) Show sick was Tony?
 - Informed about the options: Consider all options
 - (What are the alternatives?) → Counselling, Rehabilitation
→ Advanced medical treatment, Inspire others
 - Well-Reasoned: Make a reasonable decision
 - (Making the decision) → Tony was NOT granted Euthanasia

What are the different types of solutions?

Types of Solution

- Right - Wrong
 - ↳ Right: Falling de do action is con ethical, course of action is compulsory
 - ↳ Wrong: Solutions are morally forbidden
- Better - Worse
 - ↳ No solution is compulsory
 - ↳ Just one to be chosen
 - ↳ In different aspects, these solutions might be better or worse.



What are code of ethics?

- Code of Ethics
- ↳ Guidelines stating moral responsibilities of eng/neers seen by an engineering profession
 - ↳ Expresses collective beliefs & principles of conduct of its members

What elements forms the importance of code of ethics?

Importance

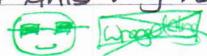
- Serving & protecting public: Grounded on correct principles
- Guidance: Guide professionals of the profession
- Inspiration: Brings the best out of us. Deliver the right things
- Share standards: Speaking the same language.
- Support for responsible professionals: Support documents
- Education & mutual understanding: Fundamentals of what to do
- Retention & Discipline: Subject to punishment for wrongdoers
- Contributing to the professional image in all aspects: Documents highlight and reinforce confidence

✓
What are causes of codes?

WSD

Abuse of Codes

- "Window Dressing" (not taken seriously)
 - ↳ Just to show, not acting on it
- ~~Stifle healthy dialogue & criticism~~
 - ↳ May not be new ideas
 - ↳ As circumstances may be different, code of ethics may not fit in every single circumstance
- Discourage Moral conduct
 - ↳ Just blindly following the code, keeping own job compared to highlight wrong doings
 - ↳ e.g. criticizing something that was done wrong by another engineer

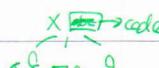


what are the limitations of codes?

GAC

Limitations of Codes

- Codes are restricted to general ~~wording~~
 - ↳ thus have areas of vagueness
- Not able to address all situations
 - ↳ Flawed if left out or a compromise between differing judgement



what makes a good professional code?

CBP

Professional Code

- Clear & Coherent
- Basic Moral Values laid out in a systematic & comprehensive way
- Provide guidelines with carefully considered moral convictions

what are the first of professional codes?

Summary of Codes

- Not always the complete & final word
- Not substitute for individual responsibility in dealing with dilemmas

Example

→ Doing something morally wrong and arguing that it is not written in the code of conduct

what types of Moral frameworks exist?

What is Utilitarianism

vs Cost Benefit Analysis

Analysis under

Moral Frameworks?

what example brings out the point?

Utilitarianism vs Cost Benefit Analysis?

Principles → Utilitarianism vs. Cost Benefit Analysis
 Moral Frameworks → Rights Ethics & Duty Ethics
 → Virtue Ethics

Utilitarianism vs Cost Benefit Analysis

→ Produce most good for most people, giving consideration to everyone affected. → Utilitarianism

Terry Nichols Case

Rights Ethics vs Utilitarianism

→ Grant Tangs → Reject as "right to die" may appeal to die become "duty to die"

Newport News Shipbuilding

We shall build good ships here - at a profit if we can - at a loss if we must - but always good ships

→ Identifies the good & bad consequences of some action or policy → Cost-Benefit Analysis

Example

Ford Motor Co. - Ford Pinto Car

→ Shifted the differential back, moving it very close to the fuel tank. An \$11 part for each car would protect the fuel tank.
 → Did Cost-Benefit Analysis based on costs to "add the part" vs costs for "deaths & injuries" A 'ZONE were \$137 million & \$ 16 million respectively.

- ↳ Did not install the filter
- ↳ Resulted in higher deaths & injuries
- ↳ Costing ~~more~~ much more & negative publicity.

- ~~Harm cost~~ Utilitarianism not considered
- Good/Bad of CBA ~~is~~ purely based on dollars, seriously flawed
- ↳

What is rights ethics
(Duty ethics under Moral Frameworks?)

Rights Ethics & Duty Ethics

- ↳ Rights Ethics → Human rights as fundamental
- ↳ Duty Rights → Duty bound as fundamental
- ↳ This theory looks at the individuals' dignity & worth compared to Utilitarianism's emphasis on the general good.
- ↳ Duty & rights are inter-related
 - ↳ Because you have right to live, I have a duty not to kill you
 - ↳ ↳ Because I have duty not to ~~deceive~~, you have a right not to be deceived

What is one example of Right Ethics & Duty Ethics?

Example

- Union Carbide - Bhopal Plant
- ~~Central~~ Central location in India
- ↳ Next to a reliable water-source for people
- ↳ Adjacent to existing residential neighbourhood
- ↳ Imported MIC ~~and~~ leaked. → Plant wasn't maintained well
- ↳ It remained ~~above~~ the ground
- ↳ MIC leaked and killed thousands of people
- ↳ Birth deformities

→ Behaviour showing high moral standards

What is Virtue Ethics under Moral Frameworks?

Virtue Ethics

- ↳ Character more than rights & rules
- ↳ Character is a pattern of virtues & vices in an individual
- ↳ Responsible professionalism is the most comprehensive virtue of engineers
 - ↳ Well-being, professional competence, cooperative practices & personal integrity



Other Virtues

- Public-spirited virtues - Focus on good for clients & the public
- Proficiency virtues - Mastery of one's profession
- Teamwork virtues - Working well in teams
- Self-reliance - Do the right things without others' watching

What is an example of Virtue Ethics?

Example

- NASA - Challenger Space Shuttle
- NASA managers were anxious to launch the Challenger
 - ↳ Other countries are flying → Has been postponed → By the president
 - ↳ Economic Considerations, Scheduling Deadlines, Political Pressures
- An engineer ~~noticed~~ found problem with the low temperatures.
- Designed for min temp at 51°F
- Experienced only to : 53°F
- Actual temp on launch: 26°F
- Initially Kilmister (management member) wanted to hold back the launch
- ↳ Management member told Bresley & Thompson, both engineers to take off their engineering hats & ~~wear~~ wear management hats.
- NASA managers decided to make the decisions to launch.
- ↳ Bresley didn't stand up for what was wrong. He followed his Boss words
- Implicit contract between engineers & society
- Guidance by code of ethics but not according Responsible Professionalism
- Engineer's obligation to public must not be overridden by Company Loyalty

} Summary

What types of moral framework exists?

Moral Frame works

- Utilitarianism vs. Cost Benefit Analysis
- Rights Ethics & Duty Ethics
- Virtue Ethics

Chapter 2.2 Ecool

Institutions & Associations of professional engineers in Singapore

No.

What are some regulatory agencies in Singapore?

Regulatory Authorities in Singapore

- Professional Engineers Board (PEB)
- ↳ Building & Construction Authority (BCA)
- ↳ Public Utilities Board (PUB)
- ↳ Urban Redevelopment Agency (URA)
- ↳ ...

What is - the mission of PEB?

Professional Engineers Board of Singapore (PEB)

- Safeguard life, property & welfare of the public
- maintaining high standards for professional engineers
- Regulating & Advancing the practice of professional engineering

What are the

legislations administered by PEB?

Legislations administered by PEB

- Administrative
 - Professional Engineers Act - Act to establish the PEB to provide
 - registration of Prof. Engs
 - regulate qualities & conduct of Prof. Engs
 - regulate organizations with engg services
 - Professional Engineers Board Rules
 - Board meetings
 - Election of board members
 - Registration of Prof. Engs
 - Disciplinary Procedure
 - Practicing cert & licenses
 - * → Professional Engineers (Code of Professional Conduct & Ethics) Rules
 - applies to registered prof. engs
 - licensed corporation or partnership
 - Administrative
 - Professional Engineers (Approved Qualifications) Notification
 - Approved qualifications for registration of Professional Engineers
 - Professional Engineers (Described amount of paid up capital) Notification

How to register as a professional

Eng?

Registration as Professional Engineer * There are specialist guidelines other than the general guidelines

- Have a qualification in Prof. Engg (Approved Qualification) Notification
- Aquired not < 4 years of relevant experience
- Pass Fundamentals of Engineering & practice of Professional Engineering Exams
- Attend an Interview

What are the functions of the PEB?

Functions of PEB

- Maintain a register of prof. engns, practitioners & licensed corporations
- Process registrations & exemptions for registration
- License organisations providing engineering services
- Maintain standards of professional conduct & ethics of the profession
- Hear & determine disputes relating to professional conduct & ethics
- Promote learning & education in the field of engineering.

What is the IES?

Institution of Engineers Singapore (IES)

- Collaborate with Universities & Polytechnics to
 - ↳ Run courses for the continuous development of engineers.
- Maintains links with professional organizations globally.

What is the professional eng' act?

Professional Engineers Act Part → Paragraph → Subparagraph

- ↳ Every registered professional engineer & licensed cooperation has to abide by the professional engineers act

Part 1

- ↳ Definition of a professional engineer

What is Part 2 about?

Part 2 Paragraph 2 → Sub Para 1

- ↳ A professional engineer shall uphold the dignity, standing and reputation of the profession.
- Sub Para 2: May publicise his practice or allow his employees or agents to do so.
- Sub Para 3: Shall not publicise his practice in a manner which:
 - ↳ Diminish Public Confidence
 - ↳ Misleading, Deceptive, inaccurate, false
 - ↳ Board may determine as an undesirable manner

What is Sub Para 3A?

- Sub Para 3A: Publicity is considered misleading, deceptive, inaccurate or false when
 - ↳ Material misinterpretation ^{→ Statement or Expression by words or actions that is} not keeping in line with the facts
 - ↳ Omits to state a material fact ^{→ what are wrong claims}
 - ↳ Contains information which cannot be verified ^{→ creates an expectation that are hard to achieve.}
 - ↳ Create an unjustified expectation about the result

What is Sub Para 3B?

- Sub Para 3B: In publicising his practice, he shall ensure
 - ↳ Claim to expertise or specialisation can be justified
 - ↳ No mention of past projects that will involve a breach of confidentiality
 - ↳ Does not make any comparison or criticism in relation to the quality of the services provided by any other professional engineer ^{not making one better by criticising a competitor}
- Sub Para 3C: For (Sub Para 3B), the factors to justify any claim to expertise or specialisation
 - ↳ Academic Qualifications
 - ↳ Experience
 - ↳ Facilities
 - ↳ Personnel
 - ↳ Capacity to Render Service ^{Time Space}

What is Sub Para 3C?

what is Sub Para 4?

→ Sub Para 4: Refrain from expressing publicly an opinion unless informed of the facts. → Refrain from criticising

What is Sub Para 5?

→ Sub Para 5: A professional engineer shall Extend of Sub Para 4

↳ Exercise due restraint in criticising the work of another engineer

↳ Not maliciously or recklessly No damage to be done ... injure another professional engineer

What is Sub Para 6?

→ Sub Para 6: (Sub Para 4) shall not affect any moral obligation to expose unethical conduct. → Exception of Sub Para 4

What is Sub Para 7?

→ Sub Para 7: Shall not endorse products or processes in an advertisement

What are an example

of Part 1 Para 2.

Examples → Sub Para 3(4)

→ Doctor punished over misleading adverts in 2010 by Singapore medical council

↳ Gave impression he was a pioneer of stem cell treatment (Misleading)

↳ Claimed it "Rejuvenate" body parts which were not medically proven.

↳ Adverts used terms like "Aesthetic medicine" and "therapy" that mislead patients to believing it were medical treatments

Part 2 Paragraph 3

→ A professional engineer shall discharge his duties to his employer or client with complete fidelity. Faithfulness & loyalty to a person.

↳ Sub Para 2: Shall not accept remuneration.

Part 2

→ Para 1: Shall not use the advantage of a solicited position to compete

→ Para 2: Shall not sign any plans without the supervision of his staff

Singapore & International Standards

Standard

→ A document approved by a recognized body that provides

↳ that provides ^{for} common & repeated use

↳ rules, guidelines or characteristics for products

↳ related processes and production method

↳ which compliance is not mandatory

Examples → SS 587(2013): Mgt of End-of-life ICT (Information Technology Equipment)

→ Singapore standards starts with the code (SS) can meet International Standards (ISO)

↳ SS1: Plywood

↳ SS2: Steel for reinforcement of concrete

↳ SS3: Safety Standards for domestic appliances

4

why standardize?

Standardisation eg. Spring Singapore → Body in charge of standards

- Make a product, process or service fit for its purpose
 - ↳ Steps to make the standard

What does standards contribute to?

IMP

IHQES

MT

Contribution

- Interoperability
 - ↳ standards on a global scale
 - ↳ producing a lot more for global scale
- Mutual Recognition
 - ↳ Cost Reduction
- Productivity
 - ↳ related
 - ↳ Higher output
- Protection of Environment
- Health
- Quality
- Safety
- Meeting market needs
- Trade

} (Exports)
Passport for bigger markets

} (Results) in having standards

} Export

What if standards did not exist?

FIU

If standards did not exist

- Poor Quality * Today standards are taken for granted
- Incompatibility
- Unreliable

What are the types of standards?

CNI

Types of Standards

- Company Standard
 - ↳ e.g. Breadtalk soybean mispractice
- National Standard
 - ↳ e.g. Singapore Standards (SS)
- International Standard
 - ↳ e.g. train standards

} delivering to
beyond just a nation

Who develops the standards?

Management of Standards

- National Standards body
 - ↳ Manage the development of national standards

WTO

How has Singapore's national standards evolved?

History of Singapore's National Standards → allow us to start trading by adhering to standards

- Industrial Research Unit (IRU) - 1966
 - ↳ Focus on industrial & regulatory standards
- Singapore Institute of Standards & Industrial Research (SISIR) formed - 1969
 - ↳ World Trade Organization
- International Standardization (due to WTO Tech Barriers) - 1994
 - ↳ SMEs & productivity improvement
- Productivity & Standards Board (PSB) - 1996
 - ↳ same focus
- The Standards, Productivity & Innovation Board (SPRING) - 2002
 - ↳ For innovation

What is the role of the NSB?

Role of National Standards Body - SPRING

- Champion Standardisation Initiatives → Strengthen competitiveness, quality, safety, health, environment
- Participate in regional standards forums → Harmonize with foreign markets
- Lead standards, conformance & negotiations In 2 Free Trade Agreement (FTA) → Facilitate Global Trade through WTO without restriction
- ↳ Agreement to establish free trade area for global businesses to operate,
- ↳ Mutual Recognition Agreement (MRA)
- ↳ Countries agreement to recognize standards & Conformity Assessments

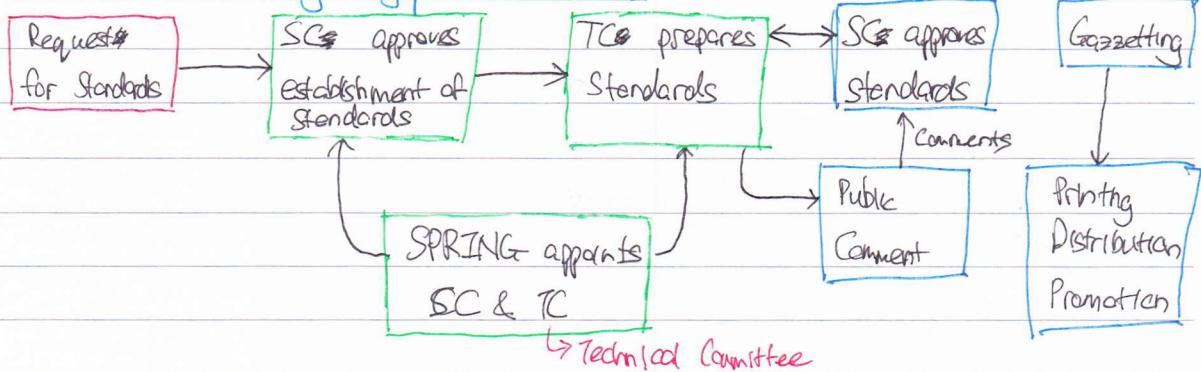
Who is the standards council?

Standards Council

- Appointed by SPRING
- Industry-led
- 3 year term
- Sets directions & policies for standards
- Appoints Standards Committees (SCs)
- Approval & Withdrawal of Singapore Standards
- Endorsement of Technical References to SCs

What is the process of establishing Singapore's standards?

Process of establishing Singapore's Standards



What is an example of the process of establishing standards?

Example: Developing Standards for ICT recycling

- To provide best practices to manage ICT waste
1. Request for Standards: NEA, IDA & SPRING
 2. Standard Council approves
 3. Appoints Standard Committee (ITSC)
 4. Appoints Technical Committee on ICT
 5. Approval of Standards: SS587 (2013)

6
W
What is the strategy
of implementing
standards in Singapore?

NS

NSI
SPP

Strategy of Singapore Standardization

- National Interests ↗ people knows the name of Singapore
- Strategic end^s to gain global advantage
- Strategic Intent
 - ↳ To improve productivity, quality & market access
- Internationally
 - ↳ Participation in international standards activities
 - ↳ Facilitate market access & increased business opportunities
- Domestically (in Singapore)
 - ↳ Support Enterprises growth through development of global standards
 - ↳ Facilitate implementation of standards
 - ↳ Promoting the importance of standards

Intellectual Property

Date

No.

What is IP?

Intellectual Property

→ Creations of the mind

↳ Inventions, art, music, designs, slogans, names

what legal protection

are provided for IP?

IP Rights

→ Patents → Inventions

→ Trademarks → Logos, designs

→ Copyrights → Songs, music, videos

→ Trade Secrets → Secret ingredient/formula

What are patents?

Patent → Inventions

↳ Protects by providing the "right to exclude" & not the "right to practise"

↳ Design Patent → Designs for manufacturing → preventing others from "practising" your invention

↳ Utility Patent → Processes & machines

↳ Period

↳ 20 years

↳ you receive your patent but does not mean the right to manufacture your inventions

↳ Sold by

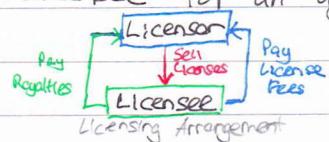
↳ Licensing & Cross-licensing

What is licensing & cross licensing?

Licensing

→ Legal agreement between ^{→ Owner} Licensor & ^{→ User of patent} Licensee for an agreed payment

↳ License Fees & Royalties



Cross Licensing

→ Allow each other to practise one another's patent without infringement

→ Example: Many Software Companies → Microsoft, IBM, Sun Microsystems, HP, Cisco

What is an example of infringement of Patents?

Example: Infringement of Patent

→ Amazon "One-click" patent

↳ Collecting payment information such that it need not be re-entered on subsequent purchases.

→ Barnes & Noble → Infringer → "Designed Around"

↳ Came up with "Express Lane", similar to ~~"One-click"~~ "One-click" except shoppers had to make a second click to confirm orders

→ Court ordered B&N to stop offering "Express Lane" (Injunction)

What is trademark?

Trademark → Logos, Designs

- Helps consumers identify the source that businesses protect their reputation & goodwill
- Protects identity of goods & services by
 - ↳ preventing use of similar marks
- Protection could be forever

What is one example of infringement of trademark?

Example: Shanghai Xinbake Infringement

- Starbucks took Xinbake to court for
 - ↳ Soundalike Starbucks ~~& Logo~~
 - ↳ Logo looks alike

Other Examples

- McDonald's vs McCurry
 - ↳ Existing years ago → McDonald's failed
 - ↳ Only linked to curry
- Rovio vs (Angry Birds) vs Kimanis (Angry Bite) → There was enough differentiation → Rovio failed
- Nike All Star vs Classic Jazz Star
 - ↳ Colour & name differences
 - Nike failed

What is copyright?

Copyright → Songs, Music, Videos

- Owner has right to authorize reproduction, distribution of copyrighted work
- Protects original & creative expressions that are tangible
- Protection could last forever

What is trade secrets?

Trade Secrets → Secret Formula (Nike, Ramen, Coke Cola)

- Formula or compilation of information that provides advantage over competitors
- Protected by measures that prevent stealing

What are some protection measures

of trade secrets

Protection Measures

- Imposing an agreement of confidentiality (NDA) when sharing with outside parties
- Imposing strict duty of confidentiality to employees

What are other ways to resolve infringement other than law suit?

Before

Before a Law Suit to stop Infringer

- Do you need the infringer to stop?
 - Cross License?
 - Royalties?
- Can you grow your business through the infringer?
 - Not in direct competition
 - Could create a market for your invention
- ↳ Ability to impose Technology & Time Limitation

Protect yourself from Infringing IP rights

- Focus on new features
 - Conduct search to assess any features, processes or methodologies being used are protected by patents
- Review patents & applications uncovered by search
 - ↳ Design around problematic patents
 - ↳ Ask a lawyer

Legislation of IP in Singapore

- Intellectual Property Office of Singapore (IPOS)
 - handles legislation & registration of IP
 - ↳ Maintains IP standards
 - ↳ Works with agencies to review policies & practices
 - ↳ Promotes IP by developing programmes

Pre-Independence History of Singapore

Date

No.

World War 2 (1939 - 1945)

What happened in

→ War broke out in Europe

WW2 during 1939?

→ Japan signed treaty of friendship with Germany & Italy named Axis Powers

→ Germany wanted to be masters of Europe

→ Japan wanted to be masters of Asia & the Pacific

What happened in
WW2 during 1941?

→ British, Australian & Indian troops arrived in Singapore to defend from Japanese attack

→ Japanese attacked Pearl Harbour, Malaya & other SE. Asian countries } 7 Dec 1941

↳ by air, land & sea

Malaya

1942?

→ Japanese captured southern most state of Singapore & were ready to invade Singapore } 31st Jan 1942

→ British withdrew to Singapore & blew up the causeway

→ Japanese troops crossed into Singapore.

↳ towards N-W part of Singapore

8th Feb 1942

→ British troops under GEN Percival retreated & were demoralized

→ Both countries met to negotiate

↳ British surrendered & GEN Percival signed the surrender agreement at 6.15pm to GEN Yamashita.

15th Feb 1942

→ Singapore renamed "Syanan-te" (the light of the south).

↳ Clocks set to Tokyo time (1.5 hrs ahead)

What happened

The Japanese Occupation (1942 - 1945)

during the Japanese

occupation?

→ British & Europeans taken as POWs

→ People feared the Kempeitai (Japanese MP) & harsh punishments

→ Operation "Sook Ching" carried out on the Chinese community

↳ Identifying & eliminating suspected anti-Japanese

What happened

End of Japanese Occupation (Aug, Sep 1945)

→ 6 & 9 Aug 1945: Atomic bombs dropped on Hiroshima & Nagasaki respectively.

→ 5 Sep: British troops returned

→ Let off the Japanese unharmed

→ Singapore saved for independence since then

→ 12 Sep: Japanese signed letter of surrender

2

What was the history

of Singapore?

History of Singapore

→ Under British & Japanese Rule

↳ 1819 - 1942 British Rule

↳ 1942 - 1945 Japanese Occupation

↳ Sep 1945 Returned to British Rule

→ Under British Rule

↳ 1955 - 1959 Limited Self-Government (Marshall Chief-Minister)

↳ 1959 - 1963 Total Self-Government (Lee Kuan Yew, Prime Minister)

→ Independence

↳ Sep 1963 Merger with Malaya

↳ Aug 1965 Separation & became a sovereign nation

What was life

like after the

Japanese?

Life after the Japanese

→ British Administration (BMA) setup for post war reconstruction

→ Shortage of food & water

→ Overcrowding & Unhygienic ~~hosting~~ living conditions

How did Singaporeans

respond when British

returned?

Response after British return

→ Organised Strikes

→ Staged Riots

→ Demand for Self-Government

→ Political Parties Emerged

↳ Labour Front (LF), Singapore Progressive Party (SPP), People's Action Party (PAP)

What was British

response when Singaporeans

wanted independence?

Response from British

→ Prepared Singapore for Limited Self Rule

↳ based on Rendel Constitution

↳ 25 ~~per cent~~ Singaporeans ^{↳ Some Control} could be elected into the Legislative Assembly.

↳ 6 Chief Ministers

What were the areas

of control given

to Singapore?

Areas of Control

→ Local Leaders: Housing, Health, Education, Trade & Industry

→ British Leaders: Law, External Defence, Internal Security, External Affairs

↳ Afraid might fall to the communist

How were the results from the 1st elections?

1955 Elections

- Labour Front (LF) won 10/25 seats
- David Marshall of LF impressed people with its strong anti-colonial stand

How did LIZ fight for self-government?

Total Internal Self-Government

- LF negotiated with the British Government (Merdeka Talks) - 1956
 - ↳ Demanded self-government → 1957
 - British were not confident of them to deal with Communism
 - David Marshall resigned as talks failed
 - Lim Yew Hock ~~succeeded~~ succeeded ~~David~~ Marshall
 - Lim Yew Hock demonstrated he could suppress Communism
 - Led another team to negotiate based on Marshall's ~~plans~~ ^{proposals} - 1956
 - Granted with internal self-government → Under British: External Affairs
→ Under State: Internal Security

} 1st Merdeka talks

} 2nd Merdeka Talks

How did the 2nd elections fare?

1959 Elections

- 1st fully democratic election
- Introduction to compulsory voting
- Greater number of voters
- More political parties took part

Facts

- 525,000 voters
- 13 parties, 194 candidates
- PAP won 45/51 seats
- Lee K.Y became PM, Yusof Ishak, Head of State

Road to Independence

- 3 June 1959, Full self-government was given

Why was merger

with Malaya a preferred path for independence?

Merger with Malaya

- Political Reason: Assure British S'pore able to withstand communist threat
- Economic Survival:
 - ↳ Declining trade
 - ↳ Jobs required for growing population
 - ↳ Formation of common market → More people
- 19 Sept 1963: Malaysia was created.
 - ↳ Comprising 11 states of Malaya, S'pore, Sabah & Sarawak

4

What issues arose
after merger?

Issues affecting Merger → Racial Issues

- Internal: Opposition from pro-communists
- External: Opposition from Philippines (claimed Sabah as theirs)
 - ↳ Indonesia (claim on Sarawak)
 - ↳ Bombings at McDonald's house

✓
political reasons

What led to separation?

TVRPA

Separation → Political

- Treatment of different races
- Views on how country is governed
- Rivalry between PAP and Alliance
- Racial Riots → Racial Tolerance
- "Malaysia for all Malaysians" Campaign of PAP
 - ↳ Challenging rights of Malays

✓
What economic

reasons led to
separation?

FILJ

Separation - Economic

- Failed to set up Common Market
- Increased Revenue contribution to Federal Government
 - ↳ Taxes
 - ↳ From 40% to 60%
- Limited Singapore economic development
- A month later, Singapore became a member of UN - Sep 1965

3.3 Political & Social Development Issues of Singapore

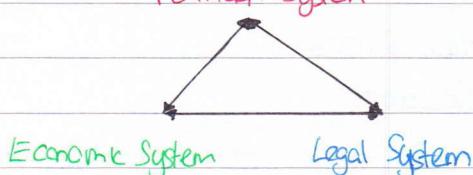
Date _____

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What are dimensions of National Political Economy?

Dimensions of National Political Economy

Political System



\$

How is the Political Framework in S'pore setup?

Political Framework of Singapore

→ Parliamentary Republic → Executive, Legislature, People

↳ Prime Minister → Head of Government

↳ President → Head of State → Elected every 6 years

↳ Largely Ceremonial events & some veto power → Keys held by both party & president

↳ Use of national reserves → court (judges)

↳ Appointment of judiciary positions

↳ Silent Sentinel to Good Governance

What is the political background of S'pore?

→ Since 1959, political scene dominated by PAP.

→ 1963, Merger to form Malaysia with Malaya, Sabah & Sarawak

↳ Aug 1965, Separation

→ Sep 1965, S'pore joined the UN

→ Today, S'pore is regarded as highly successful, clean & transparent

→ Though S'pore laws were inherited from British laws, the government has not adopted all as → Not just one set of philosophy

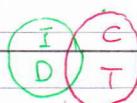
↳ there should not be a "one-size-fits-all" to democracy

America
Self-will

North Korea China
Control, Discipline, State control

Democracy vs. Totalitarianism

Political Philosophy System



I = Individualism
D = Democracy
C = Collectivism
T = Totalitarianism

Pivx Diagram

What political philosophy does S'pore adopt?

↳ Singapore's model

How does Parliament work?

Parliament

→ Group Representative Constituencies (GRCs) → 16 GRCs (76) → 13 SMCs

→ Group Representative Constituencies (GRCs) & Single-Member Constituencies (SMCs)

↳ Serves 5 year terms

→ Non Constituency Members of Parliament (NCMP) → Up to 9 members → Top losers of an election

→ Nominated Members of Parliament (NMP) → Appointed by President

→ Up to 9 members

A'ZONE

6

✓
What are some
key political issues?

SIC

- Key Current Political Issues → Preparedness & Continuity
- Succession of political leadership
 - ~~The~~ Impact of opposition political parties
 - Changing profile of the electorate
 - Another point
 - People entitled to vote
 - Voting expectations, Influence of Internet
 - Geo-political Tensions → Singapore creates extended links to not be dependent on neighbouring countries e.g. FTA with Australia, USA

✓
What are some
key political issues
externally?

TTSD

- Territorial Rights → Pedra Branca
- Terrorism → Mas Selamat Case
- Spill over effects of political instability in the region → Malaysia, Thailand, Indonesia
- Disputes → Water, boundaries, railway, etc.

What is the social
environment in

Singapore like?

Social Environment of Singapore

- Population: 5.47 million (2014)
- ↳ 3.87 million (70.75%), Singapore Residents or Permanent Residents
- ↳ 74.2% Chinese, 8.3% Malay, 9.2% Indians, 3.3% Eurasian & others

How is the birth
rate?

- Birth Rate
- 8.1 births per 1000 people
 - 3.42 deaths per 1000 people
 - 1.3% population growth (immigration & increasing life expectancy)
 - Fertility Rate
 - ↳ 1.15 children per woman under 2.0 required

✓
What are some
key social issues?

RLAIR

RIWRSN

Key Social Issues

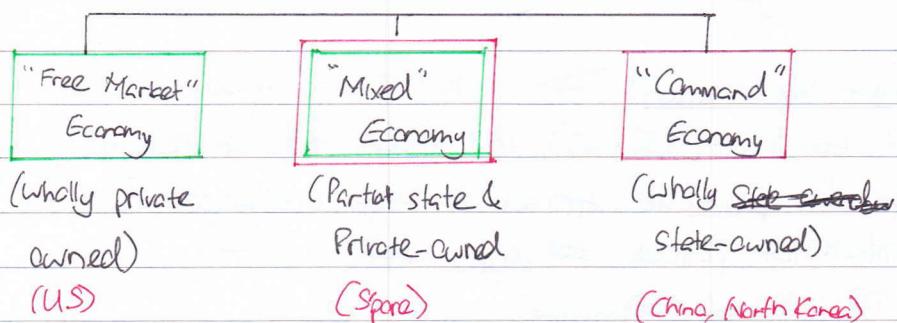
- Racial Tolerance & Harmony → Racial Differences
- Low Birth Rate → Measures to stop at 2 children
- Aging Population/Workforce → Uneducated people
- Issues of retirement, attracting senior citizens & women to rejoin the workforce → Higher retirement age
- Reliance on foreign labour/talent → Defining where to stop → zero growth policy
- Rising income gaps → Imported goods
- Inflation/Rising cost of living → Imported goods
- Work-life balance → Women placing jobs & careers ahead
- Resources to meet the 6 million people target → The best will be at the top
- Social impacts of meritocracy
- Brain drain & outflow of local talent → people leaving due to stress
- Nurturing an entrepreneurial culture → Importance of entrepreneurship

- Developing a more gracious society → we feel time is short
- Risk of rising income gaps → Causes implications
- Social vs Economic priorities
- Achieving a "Global School House" Strategy. → People coming to S'pore to study

How is S'pore economic system developed?

Economic & Industrial development issues of Singapore

Economic Systems



What is the def'n

Foreign Reserves

- of foreign reserves?
- Foreign currencies held by country's central bank (MAS - Monetary Authority of Singapore)
 - ↳ Different currencies mainly: US \$, Euro (€), Pound (£), Yen (¥)
 - Purpose: Back the nation's liabilities
 - ↳ Currency issued
 - ↳ Deposits in S'pore's financial institution

What is G.N.P?

G.N.P Per Capita

→ Products value produced within or outside the country owned by citizens

- Gross National Product per person in S'pore's population

How did Singapore's economic progress throughout the years?

Singapore's Economic Progress

- \$0.1 - \$280 billion from 1965 to 2015
- \$1,330 - \$43,500 from 1960 to 2005
- No foreign debt

What was the economic philosophy of S'pore?

Economic Philosophy

- Free market & outward orientation
- Stable macro-economic environment of low inflation, managed-float exchange rates ↳ being watched and adjusted
- Liberal trade & investment policies → welcoming ~~every~~ everyone
 - ↳ Free Trade vs "Not Free" (Restricted) Trade
 - ↳ Open market
 - ↳ Blocking trading tax
 - ↳ Prevent job loss

✓✓
What are the

Economic strategies
adopted by S'pore?

IEIEFIC

Economic Development Strategies

- Import Substitution (1958-65)
- Export Orientation (66 - 78)
- Industrial Restructuring (79-84)
- Economic Diversification (85-92)
- ~~Further~~ Further Restructuring (93-99)
- Knowledge-based economy (> 2000)

✓✓
What is Import
substitution?

OP

Import Substitution → Many businesses in Singapore

- Self Government (1959-63) to Federal State of Malaysia (1963-65)
- Open door policy to attract foreign investment
- Protectionist policies ~~using~~ using Tariffs → Taxes
- 1959 (3% Unemployment)
- ↳ 1965 (> 10% Unemployment)

✓✓
What is Export
orientation?

CFK

Export Orientation → Since Independence in 1965

- Import Substitution failed due to small domestic market
- British withdrawal brought along loss of 80,000 jobs
- Adopted Export Orientation approach (Foreign Direct Investment) → EDB
- ↳ Removing Tariffs, Exports grew, unemployment reduced
- ↳ 1970 (full employment)
- ↳ Threatened by resource-rich neighbours for ~~foreign~~ (foreign), labour-intensive jobs

What is Industrial
Restructuring?

Industrial Restructuring

- Transform to hi-tech, skill-intensive industries
- EDB-MNC Training centres established to provide skilled ready people
- Develop high valued services

What is economic
diversification?

Economic Diversification

- 1985, 1st Economic recession, recovered a year later
- EDB promoted total business concept

What is further
restructuring?

Further Restructuring

- Relocating low ~~value-added~~ value-added industries overseas
- Government-control companies taking lead → DBS Singtel
- Fears of talent ~~foot~~ going overseas

✓
what is the defⁿ
of a knowledge
based economy?
KH

knowledge-based Economy Definition

- Economy that
 - ↳ Powered by knowledge-intensive & high value-added manufacturing & service industries
 - ↳ Create, absorb, process & apply knowledge through human & intellectual capital
 - ↳ Leverage on science, technology & innovation

✓
What is the imp
of knowledge
based economy?
IR

Importance of knowledge-based economy

- Intensive competition & rapid technological change
- Severe domestic labour & resource constraints
- Knowledge as differential factor against regional global competition.

✓
How does a knowledge

based economy
implemented?

GOGA

Knowledge-based Economy

- Globalisation (WTO) & hyper-competition
- Opening up (liberalising) telecoms, banking & services (healthcare, education, etc)
- Growing into non-traditional countries
- Attracting foreign talent in scarce areas.

✓
What are the
national drivers
of Singapore's economic
growth?

National Drivers of Singapore's economic growth

- Economic Development Board (EDB)
- International Enterprise Singapore (IES)
- Jareng Tuan Corporation (JTC)
- SPRING Singapore

✓
What are the key
issues & challenges
for Singapore's economic
future?

SALREF

Key issues & challenges to Singapore's economic future

- "Structural Unemployment" → Out of jobs as it does not fit the current strategy
- Ageing workforce mainly unskilled
- Limitations in water & natural resources
- Limited land availability
- Heavy reliance on MNCs (Multi National Corporations)
- Weak entrepreneurial sector → Low demand in Singapore
- Heavy reliance on foreign workers in certain sectors

(O)

✓
What are plans or
ways in place
to respond to
key issues &
challenges?

LPRB
IPCE

Response to key issues & challenges → How Spore deals with it?

- Raising Productivity
- Flexible foreign worker policies
- Retirement age to 65 yrs
- Providing continual education & training
- Internationalisation of Spore Companies
- Promote Entrepreneurship
- Pursue Innovation
- Continual restructuring of ~~existing~~ economy
- Enhance human capital

} Long term

What are the
characteristics of
a future economy?

- Globalized Economy
- Creative & Entrepreneurial Nation
- Diversified Economy → Twin engines of manufacturing & services
- Spore companies complement MNCs → startups co-exists with existing businesses
exploring new & innovative ideas

4.1 Singapore's Neighbours & International Relations

Date

No.

What is ASEAN?

Association of South-East Asian Nations (ASEAN)

→ Formed on 8th August 1967

↳ Singapore, Malaysia, Thailand, Indonesia & Philippines (ASEAN 5)

↳ Bangkok Declaration

→ Safeguard political & economic security

→ Promotion of economic, social & cultural development → Integration

→ Forum to resolve ~~inter~~ intra-regional differences

W
What is ASEAN 10

ASEAN 10

→ Brunei (1984)

→ Vietnam (1995)

→ Laos, Myanmar (1997)

→ Cambodia (1999)

What is ASEAN

ASEAN Institutional framework

Institutional framework → Consensus method for decision making

→ Loose framework

↳ allows flexibility in accommodating the political, economic & social diversities

↳ Deal with sensitive issues without undermining ASEAN harmony

W
What are the framework shortcomings

Framework shortcomings → Lack of integrated decision making structure

↳ lead to problems of coordination

→ Policies agreed but not carried out

→ Rotation of Chairmanship lead to problems of continuity → Yearly change of chairmanship

→ Dominant emphasis on national interests → ASEAN 2nd priority

→ Entirely policy regime & no legal regime → No punishment for things not done

ASEAN key challenges

→ The "ASEAN Way" → "Non Interference" attitude

→ Security Issues → Differing threats

→ Economic & Trade issues → Differing economies

↳ AFTA implemented → Tough for countries to agree

ASE

2

✓✓

What is ASEAN Charter?

Establishment of ASEAN Charter - 2005 Dec 2008

- Underpin ASEAN with a formal structure & legal powers
 - ↳ A legal system implemented
 - ↳ Clear rules for decision making & settlement of disputes

✓✓

What is AEC?

ASEAN Economic Community Blueprint - Dec 2007

- Framework to forge FTA zone by 2015
 - ↳ Goods, services, investments will be allowed to flow freely.

4.2 Challenges of Globalization & the new economy

Date _____

No. _____

What is Globalisation?

Globalisation

- Shift towards more integrated & interdependent world economy
- ↳ Past: Countries as independent economies
- ↳ Present: Countries in a globalised world economy

→ Need each other

What are the components of Globalisation?

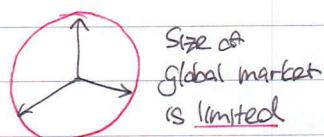
Two Components of Globalisation

- Globalisation of markets
- Globalisation of production

What are some ideologies of international trade?

Ideologies of International Trade

"Zero-sum game"
High resources
Ideology

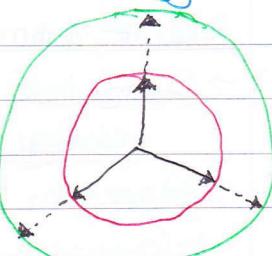


- "Protectionist" Trade Policies → raise a lot of limits
e.g. raising prices
- "Beggar-thy-Neighbour" policies
↳ making neighbours look ugly.

"Positive-Sum Game"

Ideology

Size of global market is unlimited

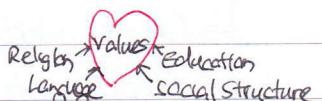


- "Free Trade" policies
- "Prosper-together" policies

What is globalisation of markets?

Globalisation of Markets

- Distinct national markets merging into global marketplace → Starbucks, McDonalds
- ↳ Falling barriers → Easier to sell internationally
- ↳ Preferences converge on a global norm
- ↳ Standardized products create a world market
- Difficulties that arise → ~~Refugee~~, Culture, Economic, ^{Development} Culture
- ↳ Country specific marketing strategies
- ↳ Varied product mix
- ↳ Eg. "United Colours of Benetton"
 - ↳ Europe vs. America
 - ↳ Works
 - ↳ Racial differences
- Mostly industrial products not consumer markets



4

What is globalisation
of production?

- | | |
|---|--|
| <p><u>Globalisation of Production</u> → iPhone developed in California, made in China</p> <ul style="list-style-type: none"> → Take advantage of locations <ul style="list-style-type: none"> ↳ Labor, Land, Capital → Cheap → Past: primarily manufacturing enterprises → Present: Taking advantage of modern communications <ul style="list-style-type: none"> ↳ Outsource service activities to low cost producers ↳ Outsourcing of productive activities results in products created global in nature → "Follow the Sun" Strategy 24/7 → Call Centres 24/7 over diff. countries ↳ Clinics processing data overnight → Difficulties to globalisation of production <ul style="list-style-type: none"> ↳ Barriers to FDI ↳ Transportation costs ↳ Economic political risk | |
|---|--|

What is the

role of technology?

Role of Technology

- Lowering trade barriers made globalisation possible
- Technology has made it a reality.
- Advances in
 - ↳ Communication
 - ↳ Information processing
 - ↳ Transportation technology

What are the
pros & cons of
globalisation?

Globalisation Debate → Double edged sword

Pros

- Lower prices for goods & services
- Stimulate economic growth
- Increase in consumer income
- Create jobs
- Specialise in producing most efficient goods

Cons

- Destroys manufacturing jobs in wealthy countries
- Wage for unskilled workers in advanced countries decline
 - ↳ Union Carbide
- Companies move to countries with fewer labour & environment regulations
- Loss of national sovereignty
 - ↳ Country's power in making its own decisions and the right to govern