



# Managing Complexity in Organisation's

## *Semester 2*

# RHA

## Business Improvement Proposal

*Naheed Bashir*

*Sher Kayani*

*Katherin Tee*

*Chuyun Zhou*



# Agenda

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- Background of RHA
- Soft System Methodology (SSM) Analysis
  - Rich Picture
  - Root Definition & Conceptual Model
- Proposal: Salesorder Web Based ERP
  - Benefit of the Proposal
  - Financial Analysis of the proposal
- Potential Risks
- Further Recommendations

# Background of RHA

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- Founded: 2009
- Employees: 13
- Products: 5 main SKUs and accessories
- Modes of business operation: B2B & B2C
- Authorized Retailers: 6
- Sales networks: 14 countries
- Plans to increase the product range and international presence.



# Rich Picture



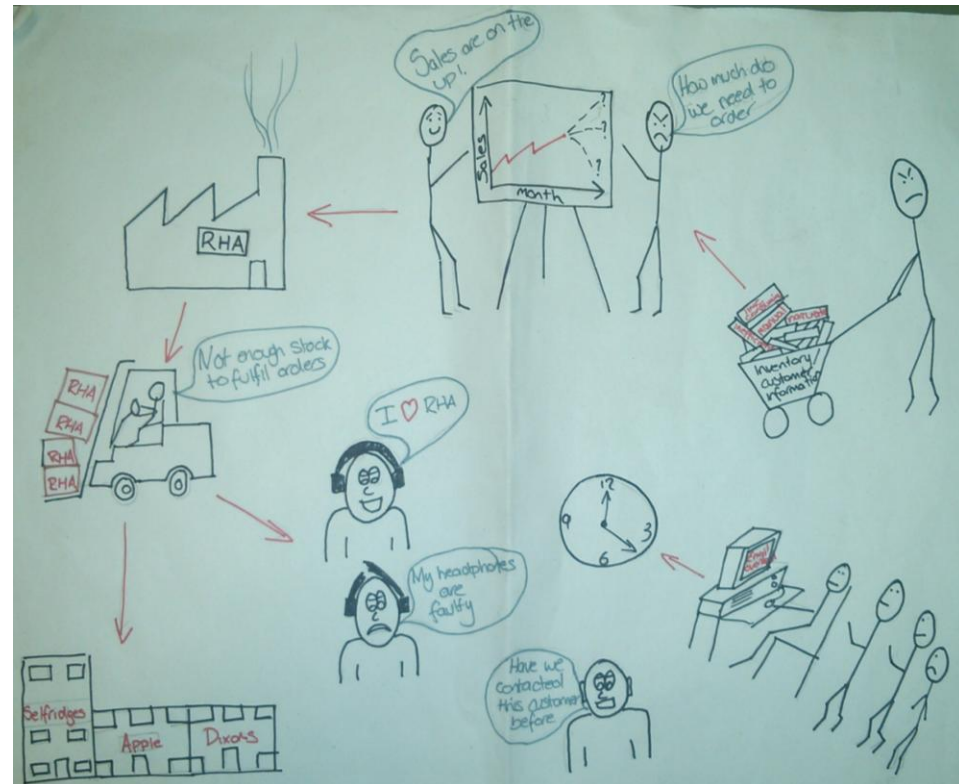
## Problems Identified:

### Operation management

- No forecasting tools.
- Everything managed through spreadsheets
- No visibility into business activities

### Customer Contact

- Single point of access of customer information
- Relying on memory for customer contact



# Root Definitions: *Inventory Management*

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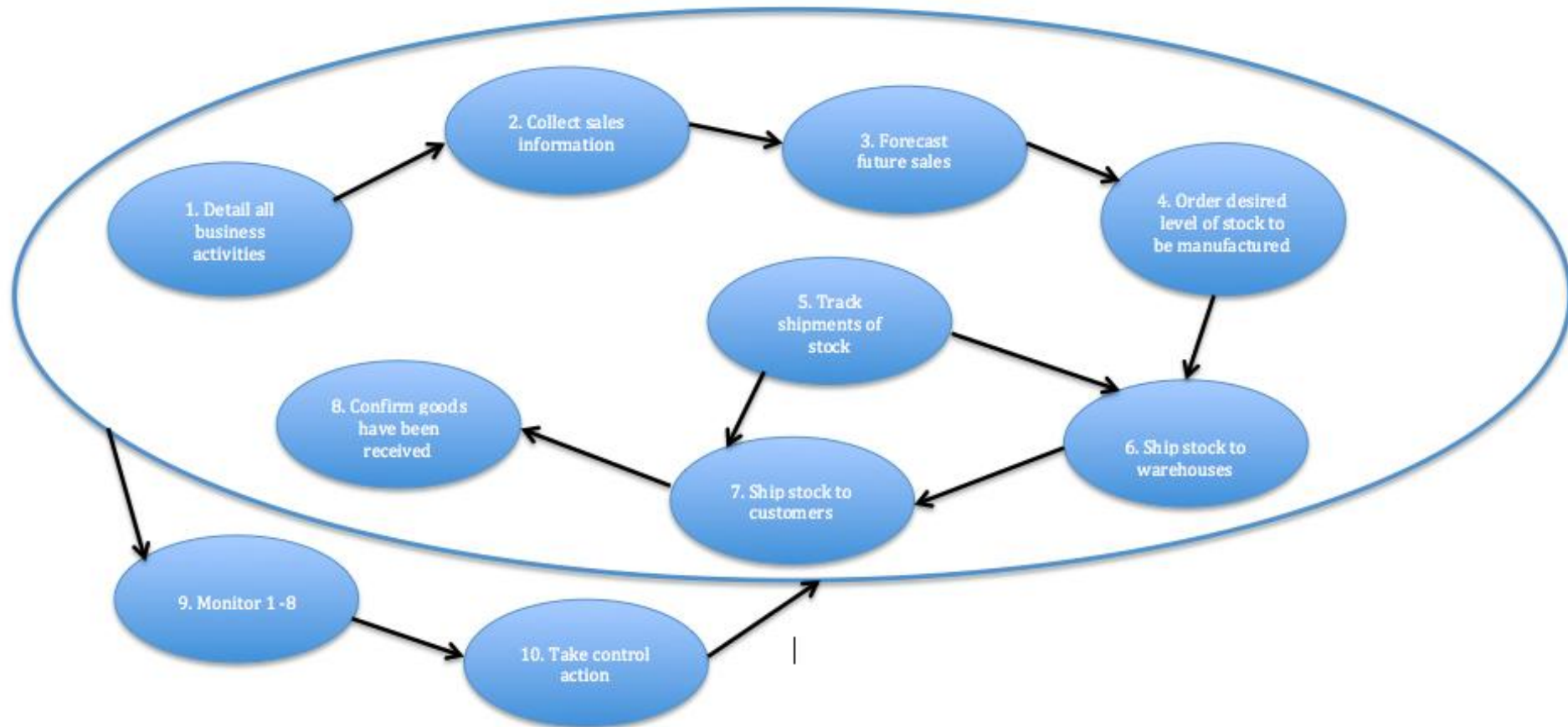
*A system to integrate and centralise RHA's business processes for the effective management and efficiency of business activities.*

## **CATWOE**

- **C** – Retailers, distributors, RHA Managers
- **A** – RHA Employees (operations dept.)
- **T** – Decentralised and unorganised view of business processes → centralised and integrated view of all business activities
- **W** – Transparency and visibility of business activities, forecasting sales for next quarter, Up-to-date, accurate information of shipments and orders
- **O** – RHA
- **E** – Employee resistance, financial constraints, understanding of all business activities



# Conceptual Model



**Effectiveness** – All business activities and processes in the supply chain from start to finish are analysed, monitored and tracked.

**Efficiency** – Forecasts are produced from the analysis of sales information. Using these forecasts the required desired level of stock is ordered from the warehouse. This minimises waste as stock levels meets customer demand.

**Efficacy** – All business processes and sales information is collected and detailed. And all transactions and orders are tracked allowing for complete visibility and traceability of business processes



# Root Definitions: *Customer Contact*

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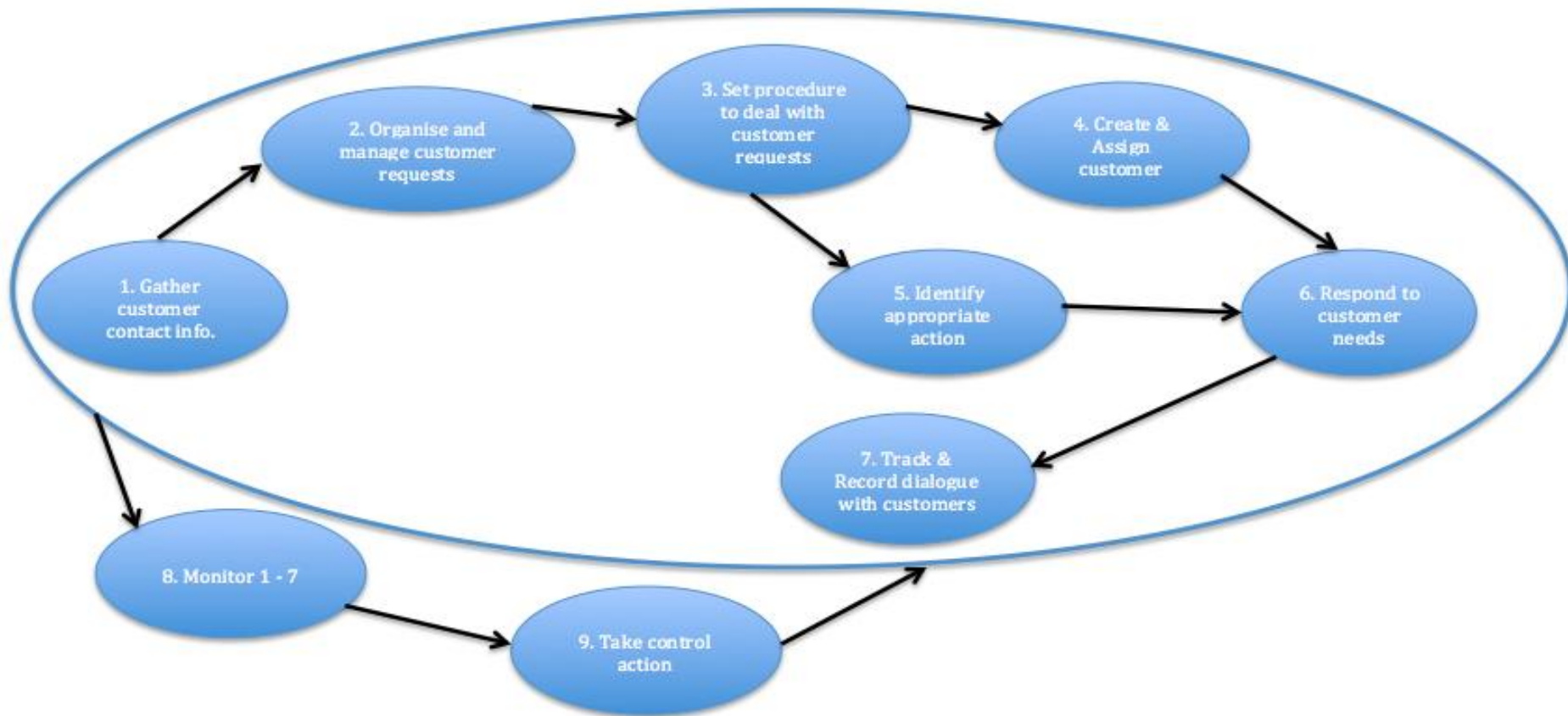
*A system accessible to all, to manage and organise customer/client information in order to efficiently respond to customer/client needs.*

## **CATWOE**

- **C** – End users, retailers, distributors, reviewers
- **A** – Employees (Communication & Customer Care depts.)
- **T** – Single point of access and unmanageable storage of customer information → multiple points of access to customer information that is organised and manageable
- **W** – Centralised customer information, organised storage of information, accessible to anyone at any time, procedures in place when dealing with inquiries
- **O** – RHA
- **E** – Financial constraints, employee resistance



# Conceptual Model



**Effectiveness** – This model effectively manages customer/client contact and is able to respond to the customer needs quickly and efficiently.

**Efficiency** – A set procedure to deal with customer requests, questions and problems allows for the quick and accurate response of the customers and clients needs. Also, organising customer contact and recording the dialogue of any contact with customers/clients will reduce the time it takes to track and find any previous contact with the customer.

**Efficacy** – Customer information is gathered and managed in one place that is well organised with set procedures to deal with customer needs and any dialogue with customers are recorded that can be easily tracked.



# Proposal: *Integrated ERP/CRM*



| Inventory Management |   | Both   |   | Customer Contact       |   |
|----------------------|---|--|---|------------------------|---|
| Forecasting          | ✓ | Financially feasible                                     | ✓ | Integrate emails       | ✓ |
| Real-time visibility | ✓ | Cost effective   | ✓ | Case management        | ✓ |
| Shipping integration | ✓ | Scalable   | ✓ | Lead management system | ✓ |
|                      |   | Accessible to multiple users                             | ✓ |                        |   |
|                      |   | Ease of use  | ✓ |                        |   |
|                      |   | Centralised  | ✓ |                        |   |
|                      |   | Minimal additional costs (Maintenance, Consultancy fees) | ✓ |                        |   |

- Salesorder.com integrated, web-based ERP system

# Benefits of Proposal

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- Improved quality and efficiency of business
- Improved decision making
- Better coordination and cooperation
- Manage customer relationships



# Financial Analysis: NPV

| NPV Analysis              | User fee: £28 User/month |             |             |              |             |        |
|---------------------------|--------------------------|-------------|-------------|--------------|-------------|--------|
|                           | Y1(5users)               | Y2(10users) | Y3(20users) | Y4(30 users) | Y5(40users) | Total  |
| User fees                 | 1,680                    | 3,360       | 6,720       | 10,080       | 13440       |        |
| Total costs               |                          |             |             |              |             | 35,280 |
| Discount rate 13%         | 0.885                    | 0.783       | 0.693       | 0.613        | 0.543       |        |
| Present value of costs    | 1,487                    | 2,631       | 4,657       | 6,179        | 7,298       |        |
| NPV of total costs        |                          |             |             |              |             | 22,252 |
|                           |                          |             |             |              |             |        |
| Efficiency rate           | 3%                       | 3%          | 3%          | 3%           | 3%          |        |
| Efficiency increased      | 15000                    | 15000       | 15000       | 15000        | 15000       |        |
| Total contribution        |                          |             |             |              |             | 75,000 |
| Discount rate 13%         | 0.885                    | 0.783       | 0.693       | 0.613        | 0.543       |        |
| Present value             | 13275                    | 11745       | 10395       | 9195         | 8145        |        |
| NPV of total contribution |                          |             |             |              |             | 52,755 |
| NPV                       |                          |             |             |              |             | 30,503 |

# Financial Analysis: Payback

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| Payback Analysis     |               |             |             |              |             |        |
|----------------------|---------------|-------------|-------------|--------------|-------------|--------|
|                      | Y1(5users)    | Y2(10users) | Y3(20users) | Y4(30 users) | Y5(40users) | Total  |
| User fees            | 1,680         | 3,360       | 6,720       | 10,080       | 13440       |        |
| Total costs          |               |             |             |              |             | 35,280 |
| Efficiency increased | 15000         | 15000       | 15000       | 15000        | 15000       |        |
| Total contribution   |               |             |             |              |             | 75,000 |
| Payback period       | 2years, 7days |             |             |              |             |        |

- Worthwhile and financially feasible

# Potential Risks

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- Security risks
- Performance risks
- Strategic risks
- Employee resistance

# Further Recommendations

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- FAQ page
- Ensure adequate training and change management
- Old with the New
- Back up data



**Thank you for your attention**



# What we have learnt

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- The Journalist and the Doctor
- Holistic business thinking

**TOPIC:**

**HUMAN STRUGGLE TO UNDERSTAND AND EXPRESS  
ACCURATE TIME: THE PAST, PRESENT AND FUTURE**

**Group Members**

**NAHEED MALIK**

**CHUYUN ZHOU**

**FOLORUNSHO ADEBAYO  
KABIR**

# AGENDA

- Introduction
- Time keeping devices from natural events
- Based on the timing of the mechanical structure
- Based on the timing of the high-frequency oscillation.
- Conclusion
- References

# **TIME KEEPING DEVICES FROM NATURAL EVENTS**

5000 to 6000 years ago

# Natural Events

1) Sundials and obelisks (Shadow Clock)

1) Clepsydra (Water Clock)

2) Hour Glass (Sand Clock)

3) By Stars (Astrolabe)

# Obelisk (Shadow Clock)

- 3500 BC- 500 BC.
- 1st clock to tell the time.
- Also called the sun clock.
- Used by ancient Egypt and Chinese.
- Consisted of a long stem with five variable marks and an elevated crossbar which casts.
- A shadow over those marks tells the time by the position of the sun.
- Positioned eastward in the morning and was turned west at noon.



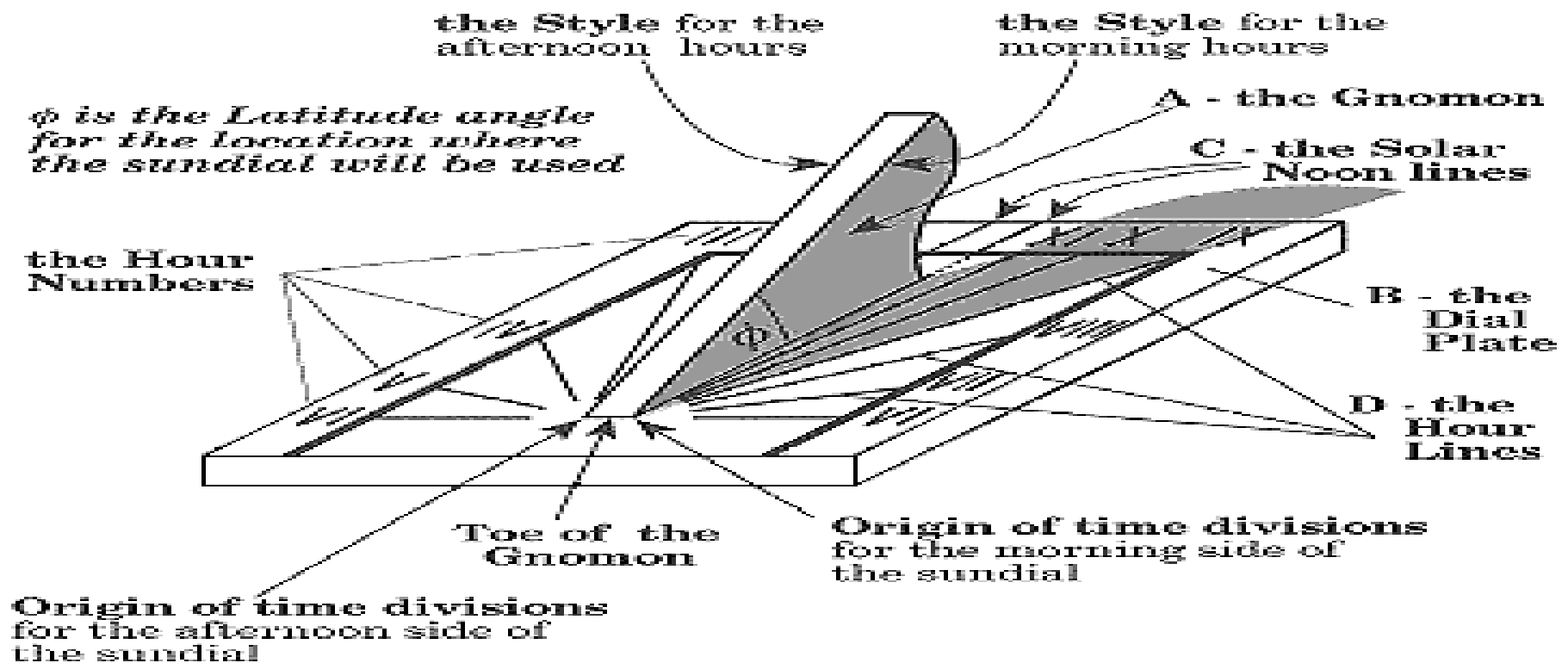
# Sundials (Shadow Clock)

- Origins in shadow clock.
- Shadow clock developed by Egyptians.
- Used around 3500 B.C.
- Sundial tells apparent sun time.
- Divided into 10 parts with two twilight hours.
- Two in morning and two in evening.
- Measure the length of a day.
- Rely on sun and useless in night and cloudy weather.



**A sundial with roman numerals. As you look at this dial, which direction are you facing**





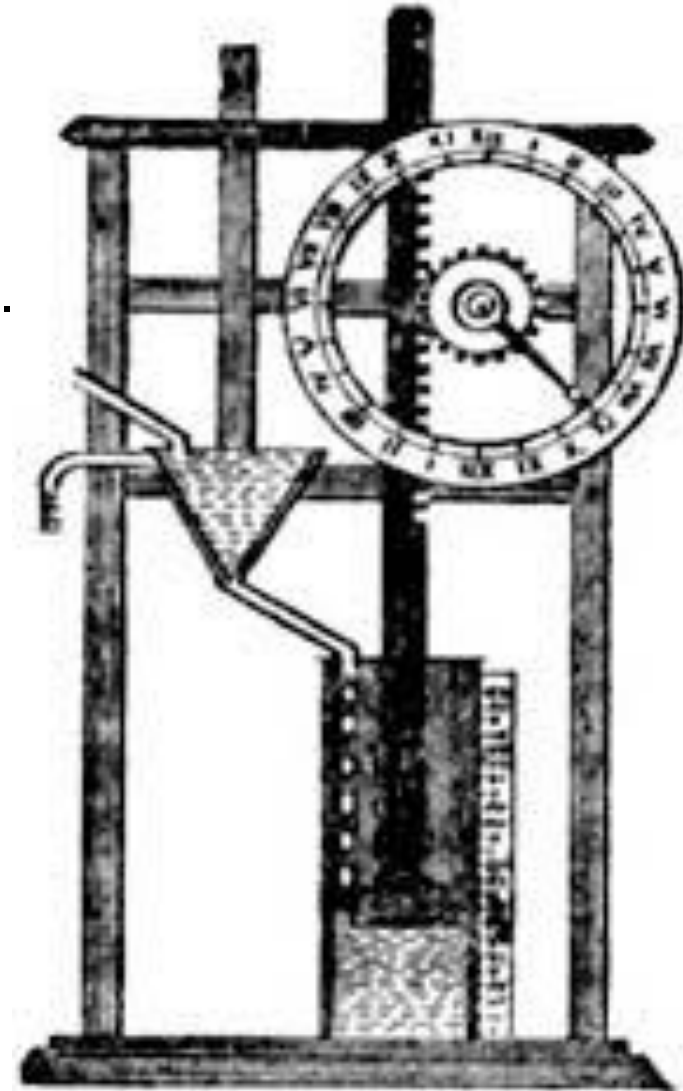
*Fig. 3. Parts of a sundial. In this example, the outer edge of the gnomon shadow tells us that the solar time is 9 o'clock in the morning. Notice that the shadow starts from the base of the gnomon, and has the same shape as the gnomon, but it is distorted due to its projection onto a different surface.*

# Clepsydra (Water Clock)

- Used in Ancient Greece.
- From Egypt date back to 1400 BC.
- Used bronze material.
- Regulated flow of liquid into and out from.
- a vessel where the amount is then measured.
- Used indoors, night & cloudy season.
- adapted to have a face with an hour hand, making the reading of the clock more precise and convenient

## Problem

- Effect of temperature.
- Slowly flow of water in cold or even freeze.



# Hour Glass ( Sand Clock)

- Sandglass, Sand timer, Sand clock, Egg timer.
- First found in China, Greece, Italy.
- Similar to water clock.
- Keeping track of elapsed time.
- Glass vessel which has two compartments
- The uppermost has a quantity of sand, water or mercury which runs into the lower compartment during a period of time.
- Used by naives as a time keeper and to find the speed of The ship.





# Star Movements



# Astrolabe

- To find the time at night by observing bright stars.
- Invented by the Greeks, and was perfected by Islamic scientists.
- Metal plate with engraving on both sides.
- On the back is a scale for measuring angles, and a rotating pointer for sighting stars.
- The astrolabe is held from a ring on top, so that it hangs vertically like a plumb line. The pointer is adjusted to sight a bright star; its angle above the horizon (altitude) is then found on the engraved angle scale.



- The front of the astrolabe is a computing device which uses both the human viewpoint (the engraved curves of altitude angle), and the stars' viewpoint (the pointers on the grill).
- This movable grill is designed with metal tips or pointers in the positions of about a dozen bright stars.
- After sighting one of these bright stars using the back of the Astrolabe, the astronomer turns the astrolabe over and finds its pointer on the grill.

# **BASED ON THE TIMING OF THE MECHANICAL STRUCTURE**

**15<sup>th</sup> century to 18<sup>th</sup> century**



Galileo Galilei



- 1582 to 1583, Italian physicist and astronomer 'Galileo Galilei' discovered the pendulum isochronous.
- But his design was not built before his death.



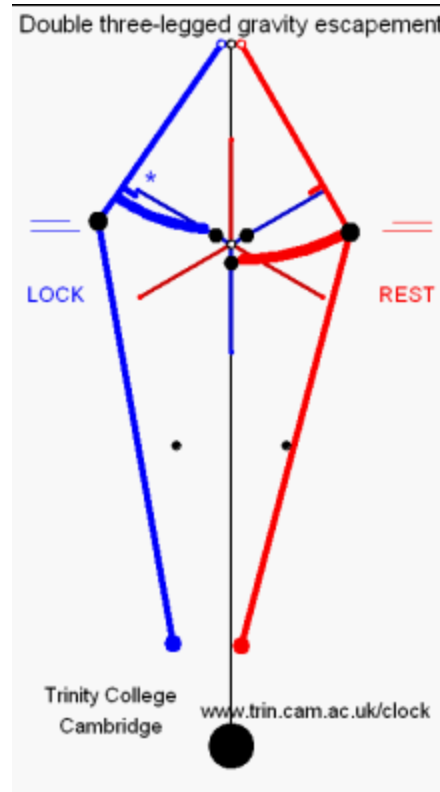
# Pendulum Clock

Christiaan Huygens



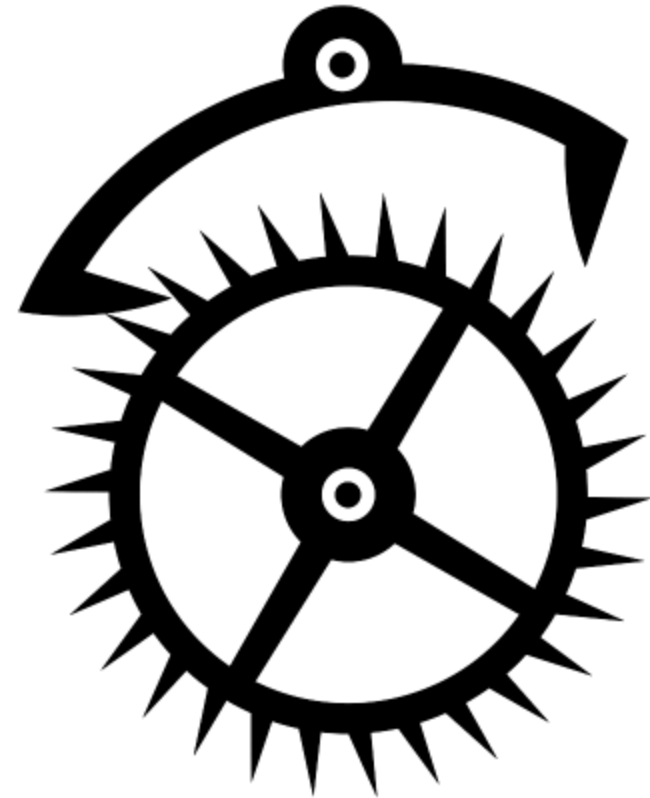
- In 1656, 'Christian Huygens' (Dutch scientist), made the first 'Pendulum clock' with a mechanism, using a 'natural' period of oscillation.
- That clock error from daily 15 minutes reduced to 10 seconds.
- But the clock does not work at sea.

# Principle demonstration



# Escapement

- 1671, in London, 'William Clement' began building clocks with an 'anchor' or 'recoil' escapement.
- Control the pendulum arc within  $3^{\circ}$  -  $4^{\circ}$  , can make reduced isochronism error minimum.



But these inventions remained unable to resist the rolling of the high seas and keep time precisely enough.

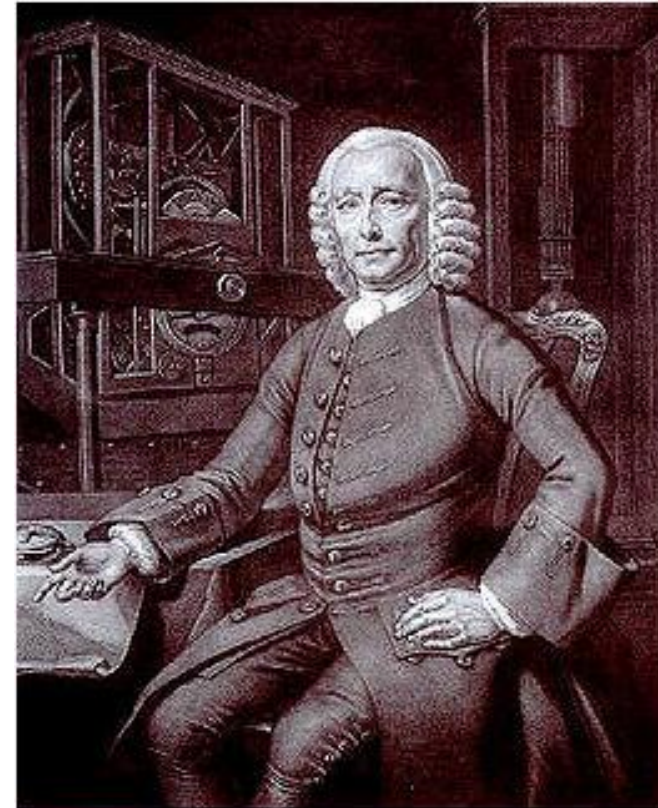
Use of the clock driven by pendulum on board can not be stable, people must think of other ways.

1714, The British government established the longitude prize to the person who invent the clock for sailing.

# Marine Chronometer

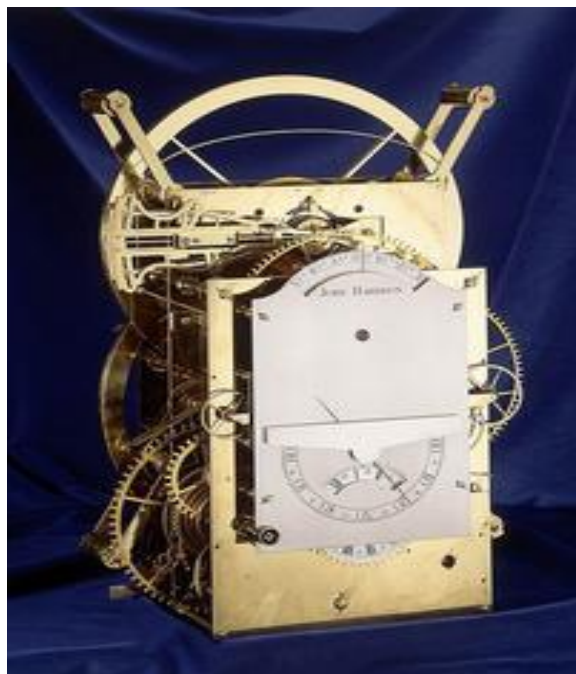
- 1761, John Harrison builds a Marine chronometer H4, that loses only 5 seconds on a voyage from England to Jamaica.
- Solving the problem of establishing the East-West position or longitude of a ship at sea.

John Harrison





## H1 to H4



H4 looked much like a large five-inch (12 cm) diameter pocket watch.

# Mechanical Watches

- Uses a mechanical mechanism to measure the passage of time.
- Driven by a spring
  - 1795 Abraham-Louis Breguet invented tourbillon in Swiss, led the time more precise.
  - 1868, Patek Philippe manufactured the world 's first mechanical watches for Hungary Royal.
  - 1923, British John Harwood invented automatic mechanical watch in isle of man.
- As opposed to modern quartz watches driving principle.





# Effects of based on the timing of the mechanical structure

- The mechanical clock have been met the needs of the precise timing, humanity has entered a new era of timing.
- Solve the longitude determination that plagued mankind two centuries .
- Revolutionizing and extending the possibility of safe long distance sea travel in the Age of Sail .
- The clock contained in the complex mechanical technology, which has also become a rich source of technology for manufacturing scientific instruments .

# **TIME MEASUREMENT BASED ON HIGH-FREQUENCY OSCILLATION.**

**From the 19<sup>th</sup> century to date**

**TIME**

- **Need for accuracy**
  - Sundial , Clepsydra and Hour Glass

**TIME**

- **Need for better accuracy**
  - Pendulum, spring

**TIME**

- **Need for the most accurate**
  - **?**

# Quartz



The first Swiss quartz clock, which was made after WW II (left), on display at the International Watchmaking Museum in [La Chaux-de-Fonds](#).



Picture of a quartz crystal resonator, used as the timekeeping component in quartz watches and clocks, with the case removed. It is formed in the shape of a tuning fork. Most such quartz clock crystals vibrate at a frequency of 32,768 Hz.

# Quartz Clock



Prototype of a Quartz  
Wristwatch, CEH Switzerland,  
1967



Quartz Movement of the  
Seiko Astron, 1969  
(Deutsches Uhrenmuseum,  
Inv. 2010-006)

- The piezoelectric properties of quartz were discovered by Jacques and Pierre Curie in 1880.
- The first quartz crystal oscillator was built by Walter G. Cady in 1921.
- The world's first prototype analog quartz wristwatches were revealed in 1967 at Neuchâtel Switzerland
- Core part: Quartz oscillator
- 270 years, only one second of error



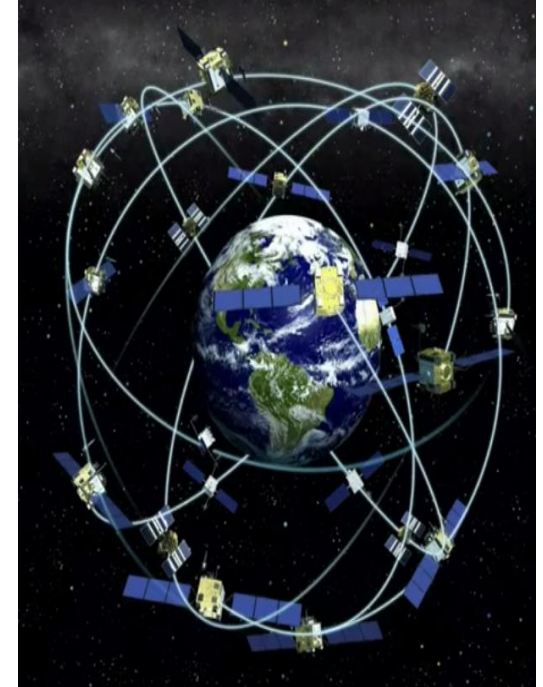
# I Need More.....Seconds Matters

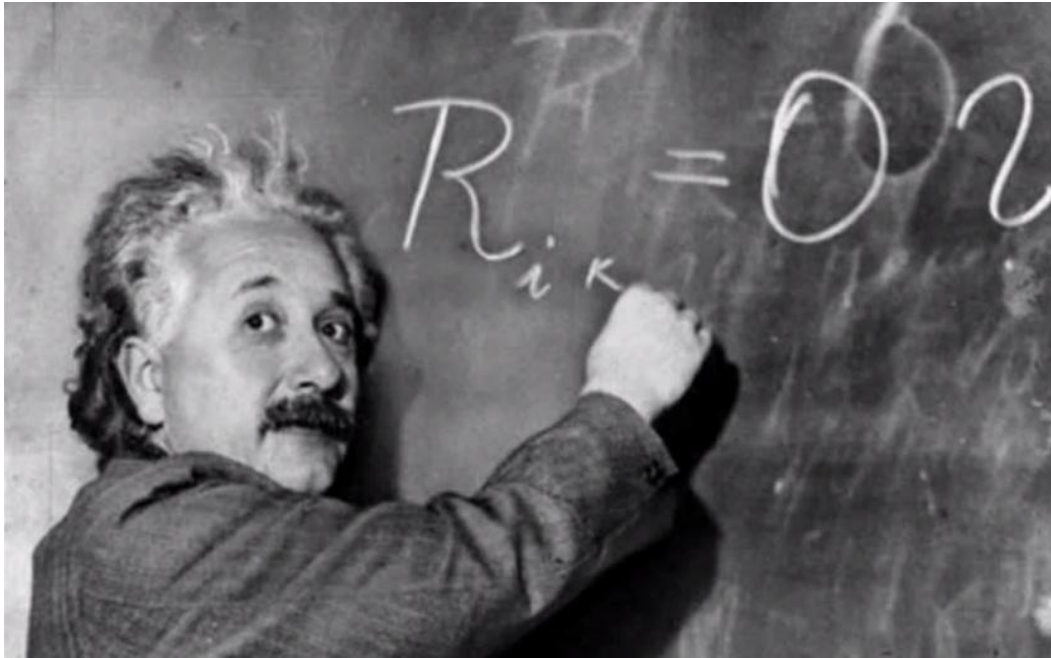


**LIKE OLIVER TWIST WE  
NEED MORE**



# Atomic Clock Era

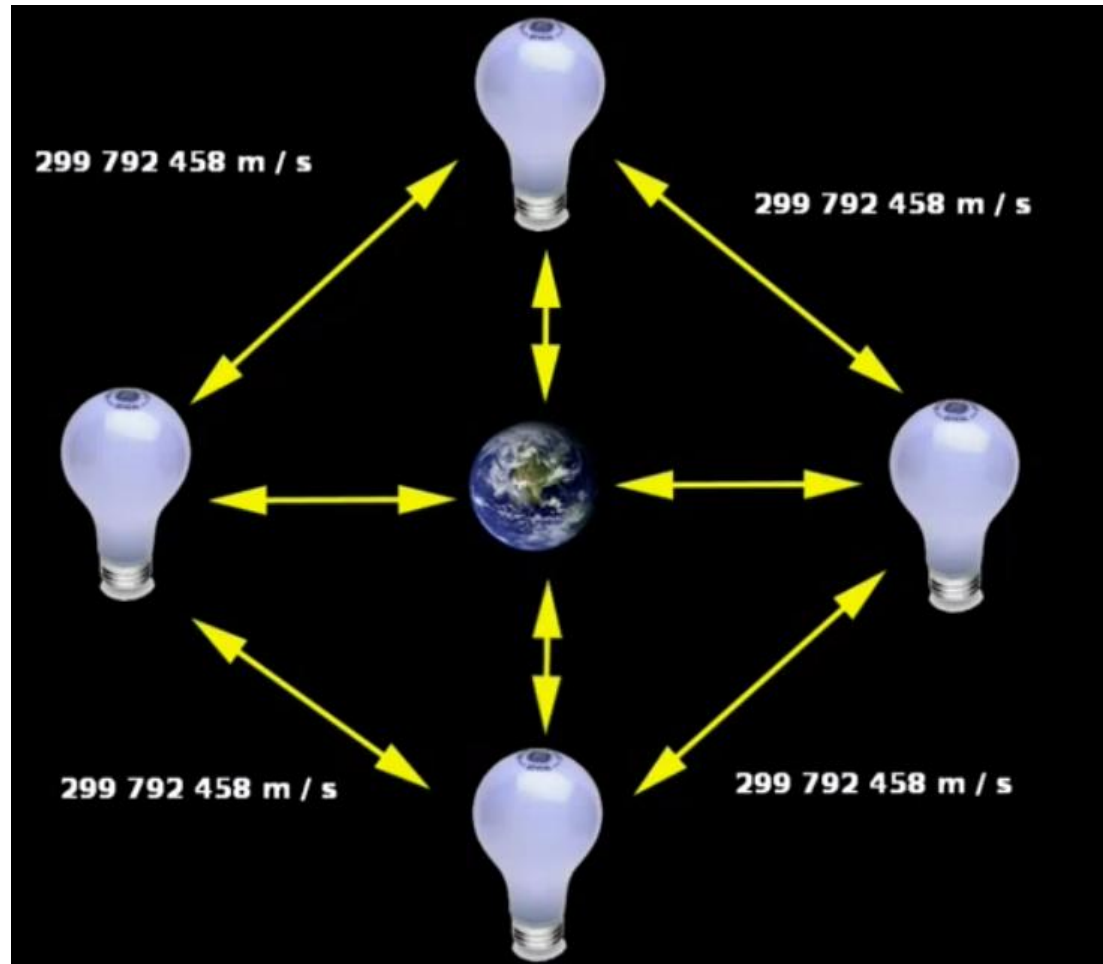




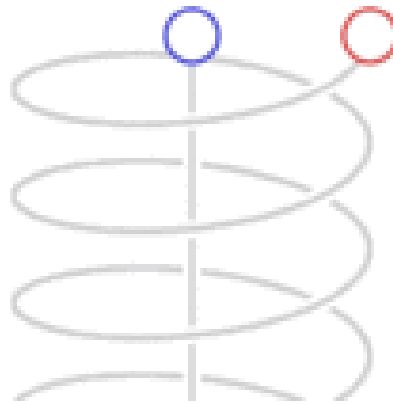
**Albert Eistein (1879 – 1955)**



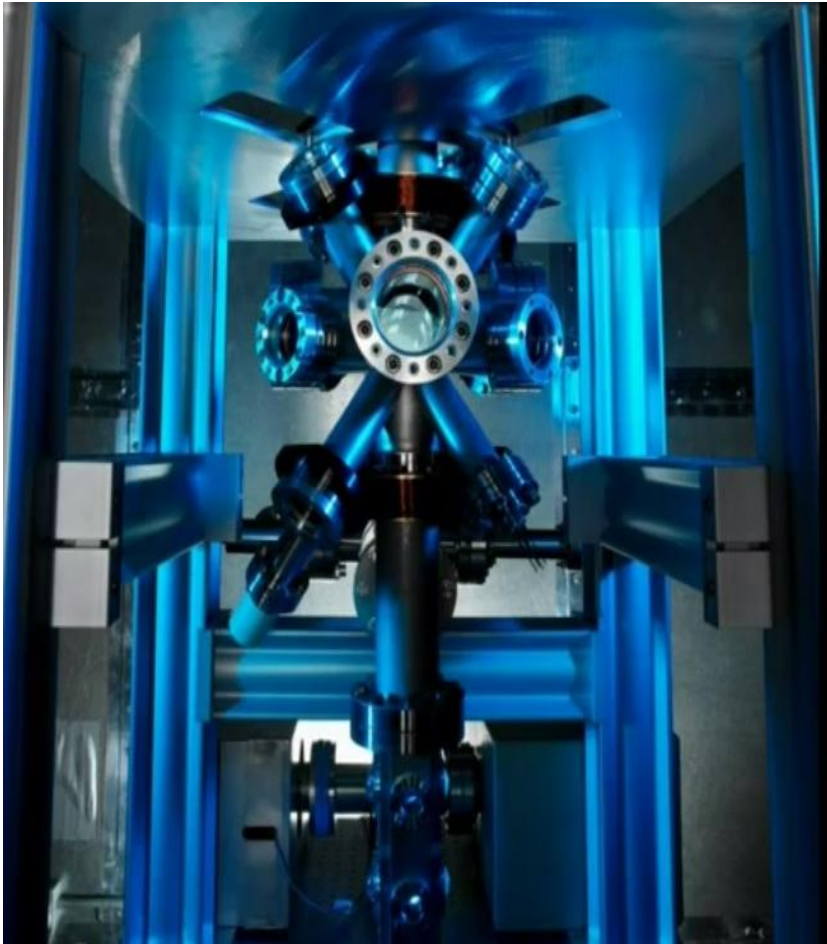
# Speed Of Light



# The Theory Of Relativity

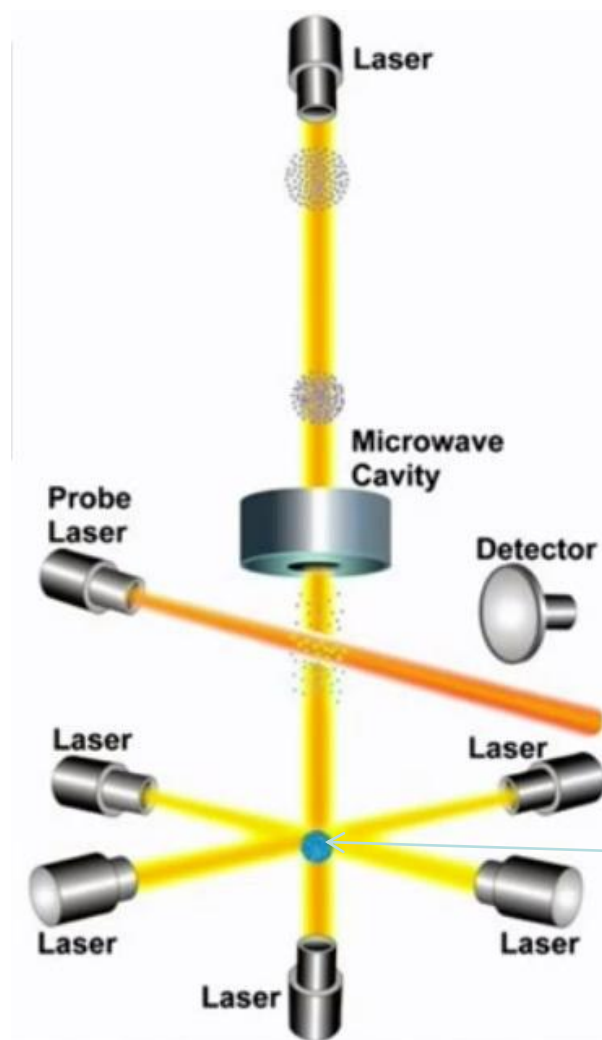


# Atomic Time Machine- Cesium



- 5 million years, only one second of error.
- used in various fields: astronomy, geodesy and national defense
- Used worldwide for vital processes including global communications, satellite navigation and surveying, and time stamping for the computerized transactions of financial and stock markets

# How Does It Work?



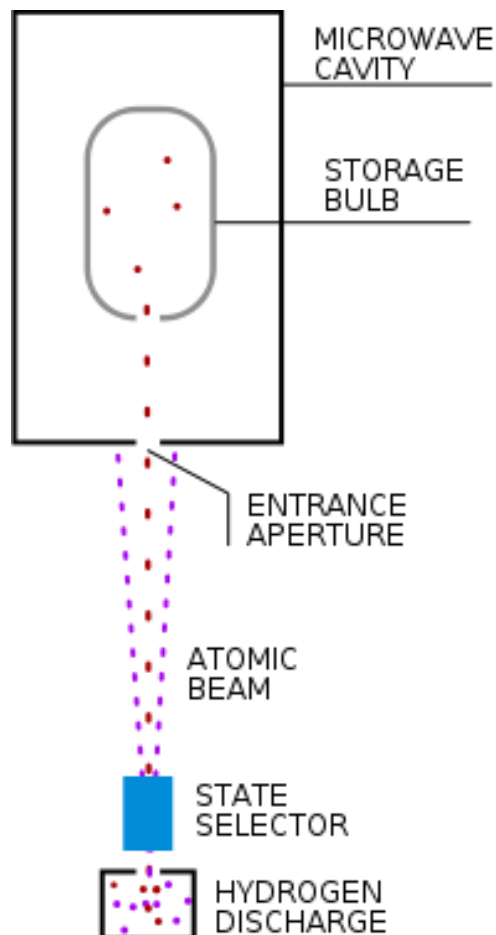
CESIUM

# Hydrogen Maser



- 3 million years, only one second of error.
- Invented by U.S. scientist Norman Foster in 1960.
- Used in: Astronomical observations, high-precision time measurement , rocket and missile launch , nuclear submarine navigation

# How Does It Work?



# Comparisons

- The Long Life Cesium Clock and both Hydrogen Masers have comparable frequency accuracies over the product lifetime; however the High Performance Cesium Clock is significantly better.
- Hydrogen Masers have better short term stabilities (ADEV) than Cesium Clocks
- Hydrogen Masers are affected by frequency drift
- Cesium Clocks require periodic Cesium tube replacements, whereas Hydrogen Masers only require periodic hydrogen refueling
- Hydrogen Masers have tighter restrictions regarding environmental conditions (temperature, humidity, atmospheric pressure)
- Portability: after having been transported, Cesium Clocks can be used almost immediately, whereas Hydrogen Masers require a settling period before being put into operation.
- Cesium Clocks may require special export licenses for some countries

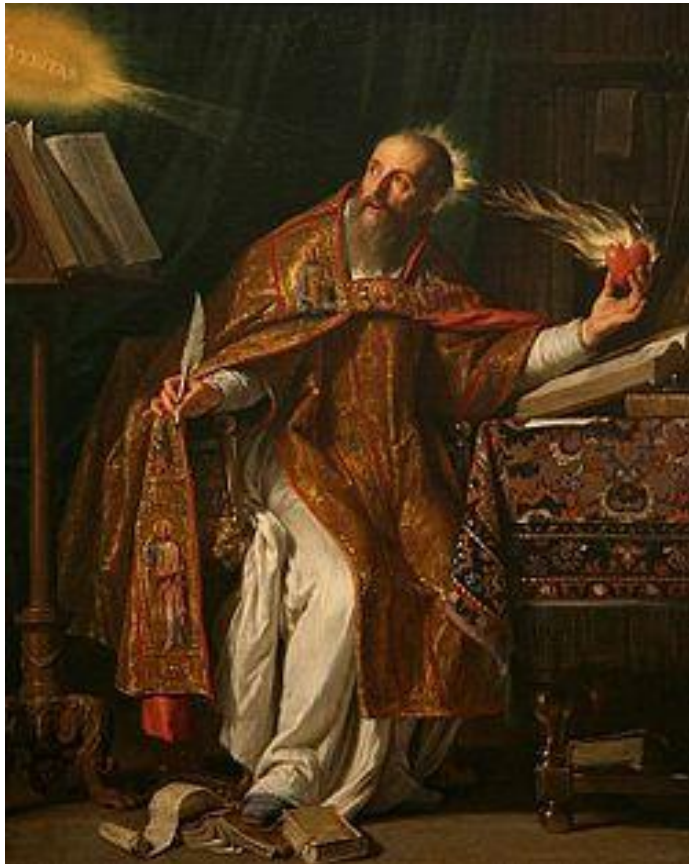


NOW, THE HUMAN TIMING ACCURACY HAS  
REACHED 30 MILLION YEARS WHICH LESS AN  
ERROR SECOND, HUMAN STILL DILIGENTLY  
PURSUING HIGHER ACCURACY.....

HAVE YOU EVER WONDERED THAT WHEN  
WE ONLY **TIME** WILL TELL  
TIME STOPS IT STOPS EVERYTHING.



# Since time is so important then what is time?



“What then is time? If no one asks me, I know: if I wish to explain it to one that asketh, I know not”

**St. Augustine of Hippo (AD 397)**

# References

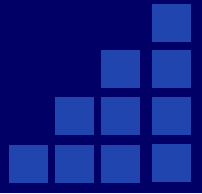
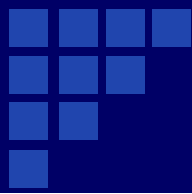
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THANK YOU!

# Is Outsourcing Customer Contact Centres From Europe to India Beneficial?



**GROUP MEMBERS:** Obinna Nri  
Chuyun Zhou  
Katherin Tee



# **PRESENTATION OF REPORT WRITING ON CALL CENTRE OUTSOURCING TO INDIA**

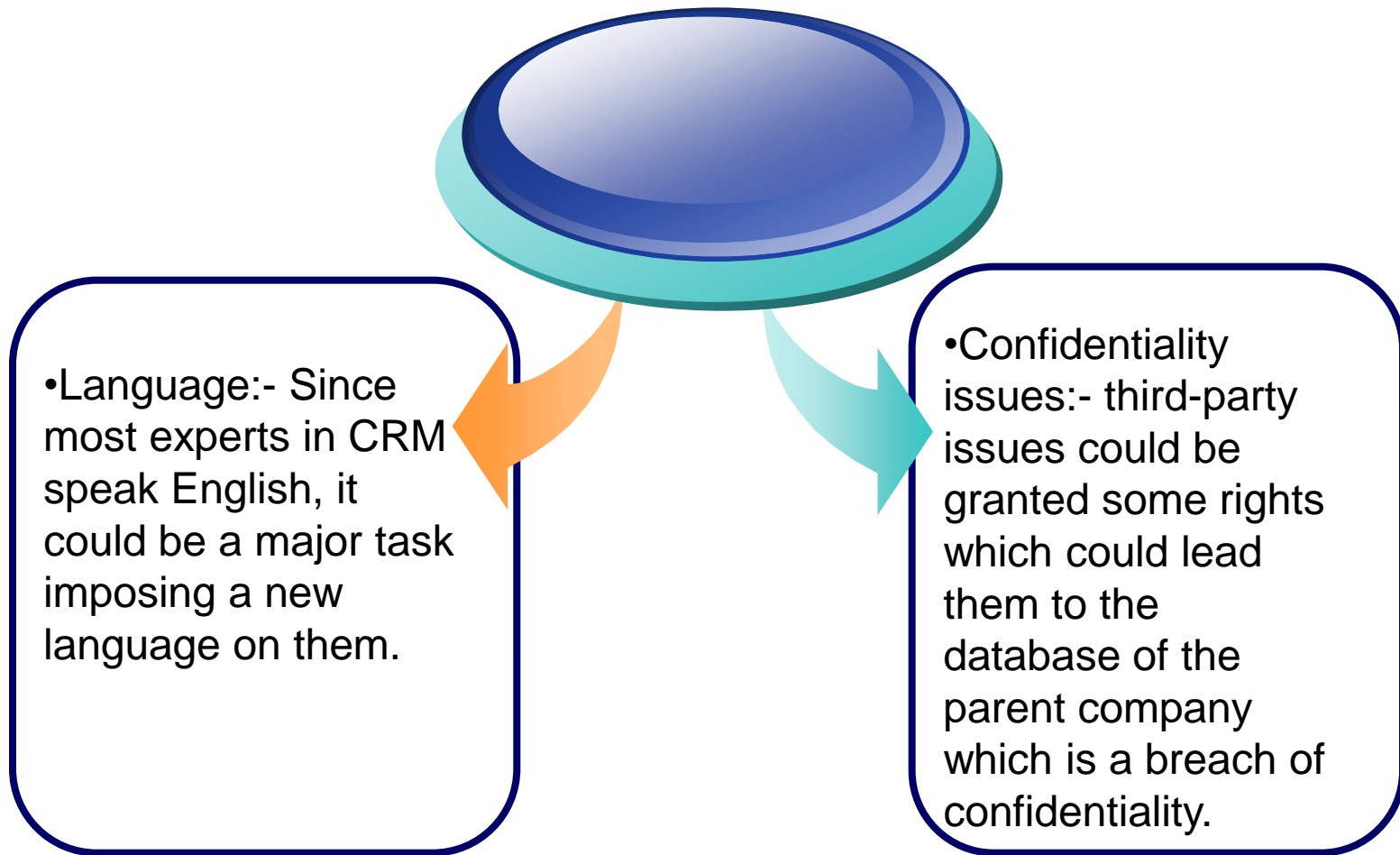
- ❖ Why outsourcing customer contact centres from Europe to India is beneficial
- ❖ Business, technical and cultural issues associated with Outsourcing.
- ❖ Issues surrounding cloud computing and its utilization in a customer contact centre.



# **Is Outsourcing customer contact centres from Europe to India beneficial?**

- ❖ **Cost Savings:-** It has helped the parent companies save funds in the area of training, infrastructure and welfare.
- ❖ **Focus on core activities:-** Outsourcing help managers channel their energy towards more strategic activities while they await reports from the CRM experts.

# BUSINESS, TECHNICAL AND CULTURAL ISSUES ASSOCIATED WITH CLOUD COMPUTING



# ADVANTAGES AND DISADVANTAGES OF CLOUD COMPUTING IN CALL CENTRE BUSINESS

## Advantages

Easy access to information.

Saves cost on infrastructure.

## Disadvantages

Data Protection

Physical resistance





## ❖ References

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# Q & A TIME



**Thank You !**

# BUSINESS REPORT

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Outsourcing of a Call Centre

Cloud Computing

# Contents

- Business advantages and disadvantages
- Cloud Computing
- Recommendation

# Advantages of Outsourcing to India

- Massive cost benefits
  - Wages can be 60-90% cheaper in India
- Avoid strict European Union legislation
- Opportunities for growth

# Disadvantages of Outsourcing to India

- Lose sight of customer satisfaction due to focus on profit maximisation
  - Potential loss of customers
  - To regain customer satisfaction can be expensive
  - Irreparable damage to ABC Plc's reputation
  - Abbey National case
- Potential increase of wages due to saturation of the labor market
- Cultural view of this type of work is becoming increasingly negative in India
  - Multiple well publicised scandals

# Other Options?

- Egypt may be worth exploring as an option for this outsourcing move
  - Currently growing in popularity (Microsoft, Oracle, Neuf Telecom and General Motors)
  - Egyptian government are placing emphasis on IT in the current education system
  - Potentially a more professional service due to this training
- New market, so wage increases are not likely in the very near future



# Cloud computing

## **Combining a call centre with cloud computing**

- Cloud Computing options
  - Private cloud : access from within the organization
  - Community cloud : allows access from several organizations
  - Public cloud : a system that is provided by a cloud service company
- Working models
  - Build their own call centre system
  - Outsource all call centre system to an IT company

# Cloud computing

## **Benefits of combining a call centre with cloud computing:**

- No need for installation or deployment
  - All services can be launched in a short time.
- No need for upgrade
- Possibility of access to documents from anywhere
- Up-to- date information
- Supports working from home

# Cloud computing

## **Disadvantages of combining a call centre with cloud computing:**

- Hard to change the provider
  - all data is stored on a remote server.
- Data protection (EU Data regulation)
  - The E-Privacy Directive prohibits to transfer data to countries outside EU that do not have the same level of data protection laws as the EU's laws

# Recommendation

- The outsourcing of the call centre would be a beneficial move
  - the concrete advantages of cost savings outweigh the potential disadvantages.
- Egypt (Middle East) should be viewed as a serious alternative.
  - India may not be the best country to outsource to
- ABC Plc should begin to incorporate cloud computing into the organisation.
  - The increased accessibility for staff from anywhere on the globe, despite raising security issues, would definitely benefit the company.

# Call Centre Outsourcing and Cloud Computing

Sarabjeet Kaur

Sher Kayani

Sutida Suwanchasri

# Presentation Outline

- Introduction
- Call Centre Outsourcing
- Cloud Computing
- Recommendations
- Q&A

# Introduction

Why outsource call centre?

- The rise in demand of business expansion
- The growing number of EU regulations

Choices for outsourcing...

- India
- Middle East

Where to outsource?

Will there be issues on business, cultural, and technology?

# Call Centre Outsourcing

- No longer restricted to large scale organisation
- Now being used by small to medium sized companies to gain competitive advantages



# Expected Benefits of Call Centre Outsourcing

- Lower costs
- Skilled expertise
- Time zone differences
- Focus on core operations
- Reputation
- Job creation in host country

# Possible Drawbacks of Call Centre Outsourcing

- Language difficulties
- Issue of confidentiality
- Loss of jobs
- Loss of control

# Cloud Computing

- A network delivering services that can be accessed remotely anytime and anywhere

## Cloud Computing for Call Centre

- Setting up private cloud for data sharing between head office, branches, and call centre
- Use software and applications provided by existing cloud providers

# Expected benefits of using Cloud Computing

- **Cost efficiency**
  - Reduce cost of communication and resource sharing
  - Reduce cost of maintenance/upgrade IT system
- **More responsive service**
  - Information will be more accessible
  - Dynamically-updated information
- **Flexibility**
  - Changes, maintenance, and system update can be handled easily

# Possible Drawbacks of using Cloud Computing

- Cost of training
- Data security
- System failure
- External attacks

# Recommendations

- Outsource to India
  - India's growing economy
  - Abundance of quality, skilled labour available
  - Saving the cost of training
- Should not invest in Cloud Computing
  - The company's focus is expansion
  - Both projects run the risk of data security

# Q&A

# Strategic Technology Management

## Microsoft Surface

Sarabjeet Kaur  
Grant McKinstry  
Sher Kayani  
Sam Berlemann

Surface™





# What does competitive advantage mean to you?

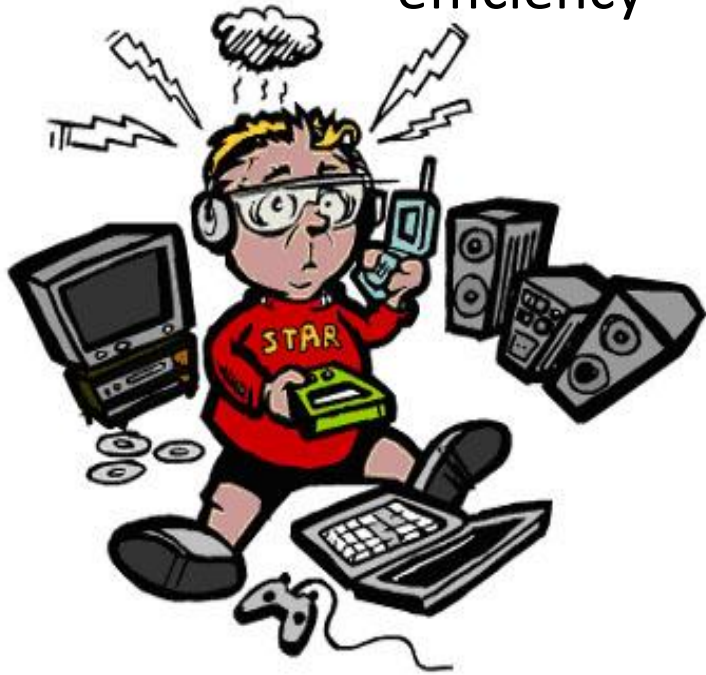
- A tangible or intangible advantage one company has over others within the same industry
- A value that a company delivers better as compared to others.
- Ability of the company to react to the changing needs of the market.
- Ability to innovate.

# Microsoft Competitive Advantage - Surface

- High Familiarity - Windows has a 91.74% market share within the desktop market
- Control over information on Windows Operating systems allows Microsoft to be the first to introduce a tablet running Windows OS
- Patented technology for the Surface Keyboard – thin, light, stylish
- High compatibility with desktop computers in the business world (Microsoft Office)
- Support for legacy applications

# What does technology mean to you?

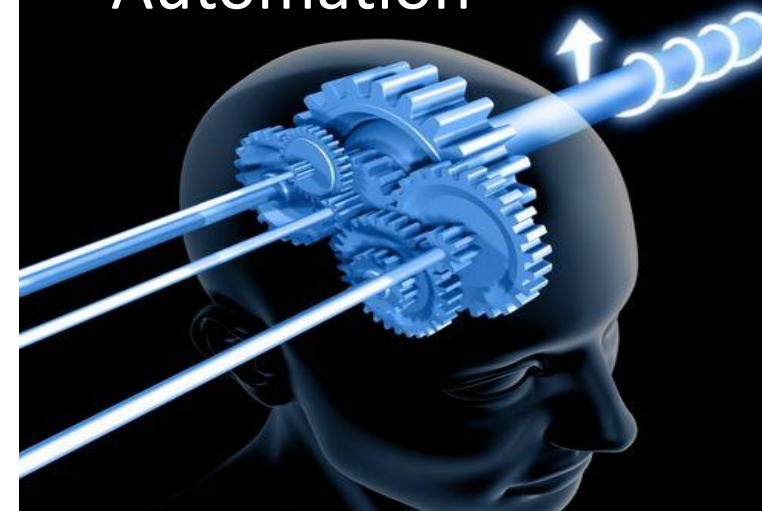
- Increased Productivity and efficiency



- Short product lifecycles
- Convenience



- Automation



# Role of technology in Microsoft's competitive potential

Technology and innovation is a critical success factor in all areas of Microsoft's business

- Updated Operating System  
Microsoft Windows 8 and RT
- Faster Processors 3rd Gen  
Intel Core i5 Processor
- Lighter components/devices
- ClearType HD Display



# References

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