

# IT development in the 21<sup>st</sup> century and its implications



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# IT development

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- ◆ **Trend**
- ◆ **Implication**
  - **Positive effects**
  - **Negative effects**
- ◆ **IT development in Korea**
- ◆ **Some strategies for future IT development**

# IT development in 21<sup>st</sup> century

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## 3 Key elements

- ❖ Digitalization
- ❖ Convergence
- ❖ Ubiquitous revolution

# Trends

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*Bring changes ;*

- **Operational styles of organization**
- **Social infrastructure**
- **Culture**
- **Individual life style**

# Rules of thumbs

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## 1. *Moor's Law*

- Chips

18months ; price :  $\frac{1}{2}$ , performance : doubles

## 2. *Glider's Law*

- IT system (bandwidth)
- 12 months – triple

## 3. *Metcalf's Law*

- IT networks
- Value explosive leap

# Digitalization

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Digitalization of ;

- IT device
- IT networks
- Information / contents



# Convergence

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## *Convergence of ;*

- **computer & communication**
- **device convergence**
- **communication networks**
- **communication & broadcasting**
- **wireless & wired**
- **IT & banking**
- **IT/BT/NT/CT/ST**

# Ubiquitous Revolution

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- ❖ **Combine strengths of internet**
- ❖ **Wired & wireless IT**
- ❖ **Connect Anyone, Anywhere, Anytime,  
Any device, Any network**
- ❖ **RFID**



# Implication of IT development

## Digitalization

Positive	Negative
<ul style="list-style-type: none"><li>• increased efficiency &amp; performance</li><li>• more &amp; better quality information</li><li>• easy interaction</li><li>• affordable e-life</li><li>: better quality life</li></ul>	<ul style="list-style-type: none"><li>• traditional business<ul style="list-style-type: none"><li>– out of business</li></ul></li><li>• digital divide</li><li>• intellectual property<ul style="list-style-type: none"><li>– hacking, plagiarism</li></ul></li></ul>

# Implication of IT development

## Convergence

Positive	Negative
<ul style="list-style-type: none"><li>• create new service/product<ul style="list-style-type: none"><li>➔ value transfer</li></ul></li><li>• conventional + IT<ul style="list-style-type: none"><li>➔ new opportunities/growth</li></ul></li></ul>	<ul style="list-style-type: none"><li>• boundaries of industries ➔ collapse</li><li>• traditional companies<ul style="list-style-type: none"><li>➔ severe competition</li></ul></li><li>• existing value chains destroyed ➔ new value chains</li></ul>

# Implication of IT development

## Ubiquitous

### Revolution

#### Positive

- overcome spatial, time constraints  
→ increase efficiency
- best quality services, most economic rate, seamless manner
- improve quality of individual life

#### Negative

- broadening information gap/digital waste
- right of being unconnected
- feeling of isolation
- information leakage, distortion, supervision

# Korea's current state of IT

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## Major achievement

- ❖ commercialization, localization of major digital technologies → National exports
  - ❖ mobile communication { device : 8%  
services : 73%
  - ❖ internet users : 59% (5<sup>th</sup>/world)
  - ❖ world's best information infrastructure
- VHS network – 144cities(2000), 2/3 households

# Korea's current state of IT

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## Some issues

### ❖ Limitations

- ✓ lack of core technologies
- ✓ Insufficient high quality manpower
  - software engineering, project management
- ✓ Insufficient competitive contents

# Suggestions / Coping strategies

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## 1. Investment in education

- academic discipline – train manpower
- new learning strategies

ICU | IT engineering  
IT management | Future IT leaders

# Suggestions / Coping

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## strategies

**2. Digital contents industry – produce composite talent, discover novel, unique ideas**

**3. Manufacturing-oriented → market-oriented industry**

**4. Balanced approach**

# In sum...

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❖ **Double edged sword ;**

**<Good>**

**improve quality of life**

**allow comfort in our lives**

**<Bad>**

**invasion of privacy**

**leakage / abuse of personal information**



# In sum...

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## ❖ How to deal

- technological advances
- education – cultivate wisdom, ethics
- law & societal systems

# Hope for a good aspect of

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## Ubiquitous era

❖ **Connect Anyone, Anytime, Anywhere**

- **collaboration among regions, nations,  
people**

*Thank you*

