



東北大學  
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# 软件工程

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# 1.2

## Software Crisis & Software Engineering

# Software Crisis

## ◆ Examples of software failures

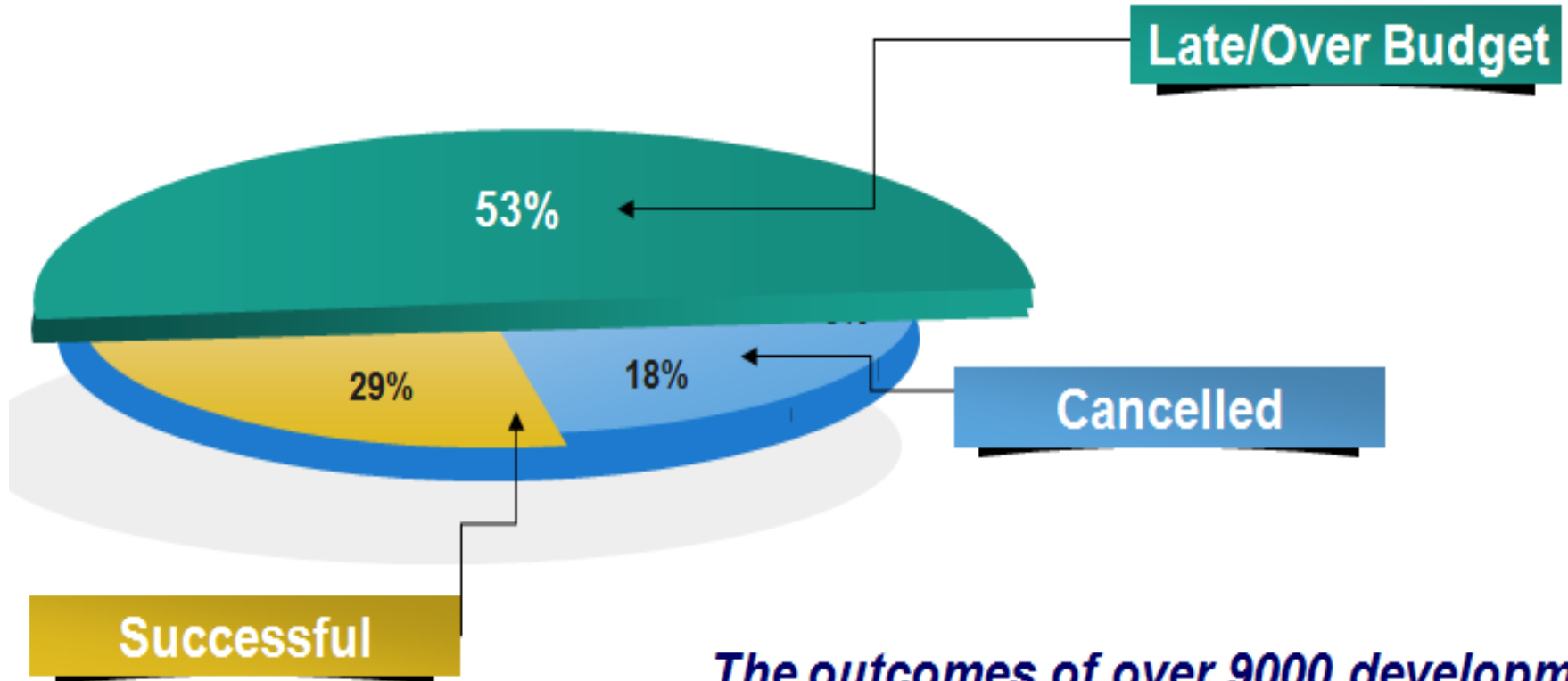
- **Windows failure**
- **Office failure**
- **Website access failure**
- **.....**

# Software Crisis

- ◆ **More and more software projects failed.**
  - *on schedule ?*
  - *on budget ?*
  - *fault-free ?*
  - *meet client's needs ?*
- ◆ **1968 NATO Software Engineering Conference**
  - *Software Crisis*
  - *Software Engineering*



# Software Crisis



*The outcomes of over 9000 development projects completed in 2004*



# Software Crisis

- ◆ **Estimation of cost and progress is usually inaccurate.**
- ◆ **The user is unsatisfied with “completed” software system.**
- ◆ **Software quality is usually unreliable.**
- ◆ **Software is un-maintainable.**
- ◆ **No documentation available.**
- ◆ **Software takes more and more proportion of the total cost of computer system.**
- ◆ **Software development does not match the rapid, deeper and wider computer application.**

# Software Engineering

- ◆ The software development is not the mysterious technique of a certain individual labor, but should be the *engineering* of an organization of all kinds of persons.
- ◆ *Software Engineering* studies exactly how to develop and support a software system.



# DISCUSS

- ◆ **What is the distinction between computer science and software engineering?**