



INFORMATION TECHNOLOGY AND THE DESIGN OF WORK

Dr. Dang Tran Khanh
Department of Information Systems
Faculty of CSE/HCMUT
khanh@cse.hcmut.edu.vn

OUTLINE

- Introduction
 - Virtual organizations
- Work design framework
- How IT supports communication & collaboration
- HOW INFORMATION TECHNOLOGY CHANGES THE NATURE OF WORK
- HOW INFORMATION TECHNOLOGY CHANGES WHERE WORK IS DONE AND WHO DOES IT
- VIRTUAL TEAMS
- GAINING ACCEPTANCE FOR IT-INDUCED CHANGE
- SUMMARY

Introduction



LEARNING OBJECTIVES

- Understand how IT has changed the nature of work
- Define virtual organizations and how they work
- List the technologies that are used to support communication and collaboration
- Explain telecommuting and the technologies that support telecommuting
- Discuss how managers need to manage virtual teams, and the challenges this creates
- Understand how attitudes impact technology acceptance in organizations



APPROACH TO WORK

- Technology has now brought the new approach to work: time and place of work are increasingly blended with other aspects of living
- People now can do their work in their own homes at times that accommodate home-life and leisure activities
- They are able to enter cyberspace, a virtually unlimited space, with full of opportunities.



VIRTUAL ORGANIZATIONS

- **Definition:** a structure that makes it possible for individuals to work for an organization and live anywhere
- The **Internet** and corporate **intranets** create the opportunity for individuals to work from anyplace they can access a computer
 - Extranet
 - An **extranet** is a private network that uses Internet protocols, network connectivity, and possibly the public telecommunication system to securely share part of an organization's information or operations with suppliers, vendors, partners, customers or other businesses (Wikipedia)
- The structure of a virtual organization is networked.
- Everyone has access to everyone else using technology.
- E-mail is the most widely used means of communication.
- Success in a virtual organization is the amount of collaboration that takes place between individuals

VERIFONE

- VeriFone, a leading manufacturer of credit verification systems, is well known for its virtual organization
- Founded in 1981 by an entrepreneur who hated bureaucracy.
- Limited presence at corporate headquarters, employees are placed close to their customers (limits travel)
- At the heart of the company culture is constant and reliable sharing of information
- Example: a new employee and his problem solved (p.100)



WORK DESIGN FRAMEWORK

- A simple framework can be used to assess how emerging technologies may affect work
- This framework is useful in designing key characteristics of work by asking key questions:
 - What work will be performed?
 - What is the best way to do the work?
 - Who is going to do the work?
 - Where will the work be performed?
 - How can IS increase the effectiveness of the workers?

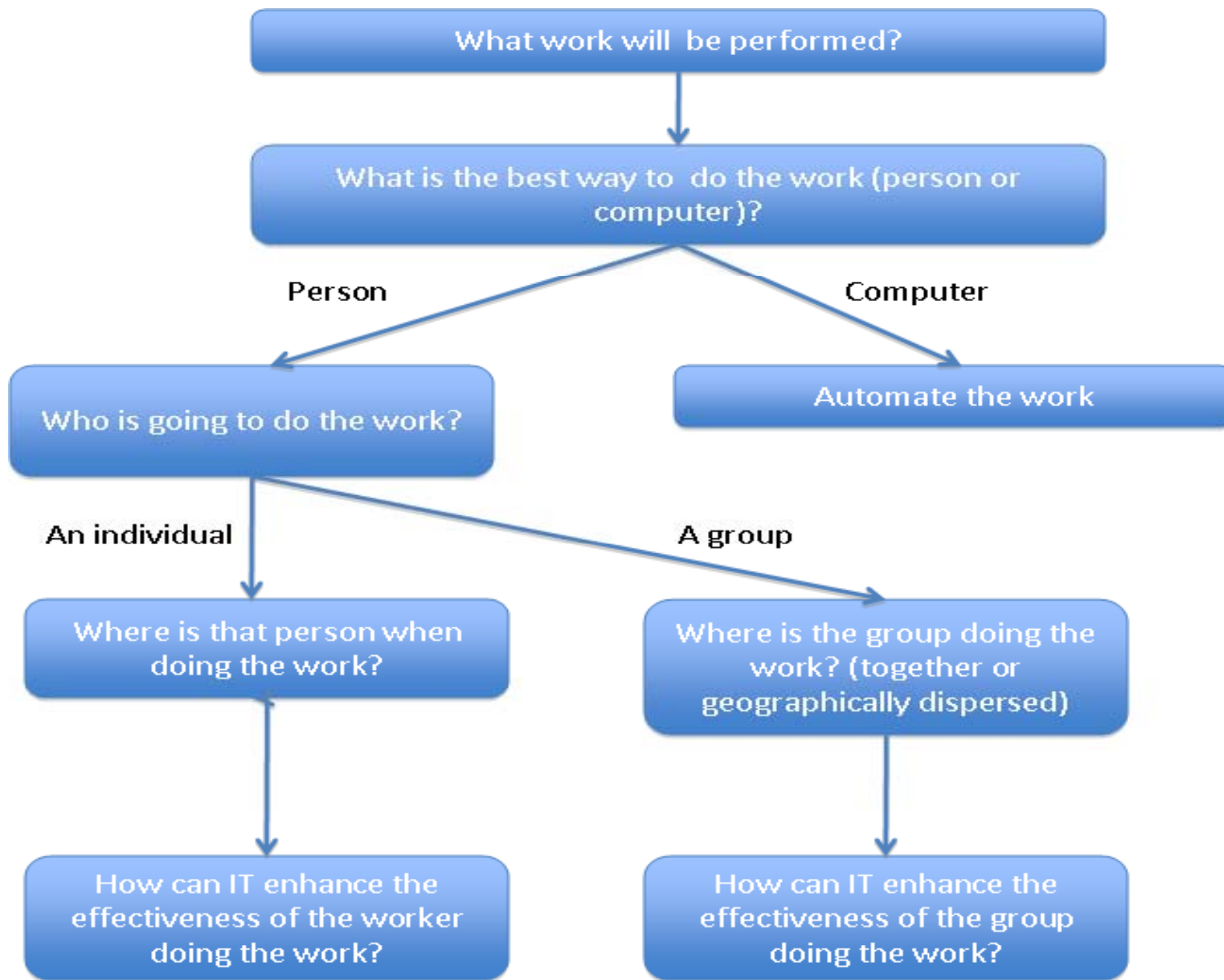


Figure 4.1 Framework for work design.

HOW IT SUPPORTS COMMUNICATION & COLLABORATION



IT TO FACILITATE COMMUNICATION

- **E-mail** - a way of transmitting messages over communication networks
 - First uses of the Internet
 - Composed primarily of text but can include other mediums (video, audio, etc.)
 - Mailing list server
- **Intranet** - Looks and acts like the Internet
 - Comprised of information used exclusively within a company
 - Unavailable to the Internet community as a whole.



IT TO FACILITATE COMMUNICATION

- **Instant Messaging (IM)** – an IP-based instant communication application
 - Provides convenient communication between people using computers, cell phones, etc.
 - Can be used to check on telecommuting employees by managers
- **Voice over IP (VoIP)** - Method enabling telecommunications (phone calls) to be transmitted over an IP based network
 - Skype is a type of VoIP system that permits users to make free phone calls over the Internet
 - Very useful for communicating with remote workers

IT to Facilitate Communication

- **Video Teleconferencing** - set of interactive telecommunication technologies allowing two or more locations to interact via two-way video and audio transmissions simultaneously
- **Unified communications (UC)** - an "evolving communications technology architecture which automates and unifies all forms of human and device communications in context, and with a common experience
- **RSS (Really Simple Syndication, Rich Site Summary)** - refers to a structured file format for porting data from one platform or information system to another
 - Commonly used to keep up to date data at hand

IT TO FACILITATE COMMUNICATION

- **VPN** (Virtual Private Network) - private data network that leverages the public telecommunication infrastructure
 - It maintains privacy through the use of a tunneling protocol and security procedures
 - Very useful for telecommuters
- **File Transfer** - consists simply of transferring a copy of a file from one computer to another on the Internet
 - File transfer protocol (FTP), the most common type. Permits transfer of files, of almost any size, to be sent across a company or the globe



IT TO FACILITATE COLLABORATION

- Thomas Friedman argues that collaboration is the way that small companies can “act big” and flourish in today’s flat world
- **Social networking** - a web-based service that allows its members to create a public profile with their interests and expertise, post text and pictures and all manner of data, list other users with whom they share a connection, and view and communicate openly or privately with their list of connections and those made by others within the system (MySpace, Face Book, etc.)
- **Virtual worlds** - computer-based simulated environments intended for its users to inhabit and interact via avatars (like Second Life)



IT TO FACILITATE COLLABORATION

- **Web logs (Blogs)** - Online journals that link together into a very large network of information sharing
 - Companies use for a variety of communication purposes
- **Wikis** - software that allows users to work collaboratively to create, edit and link webpages easily
- **Groupware** - software that enables group members to work together on a project, from anywhere, by allowing them to simultaneously access the same files.

