

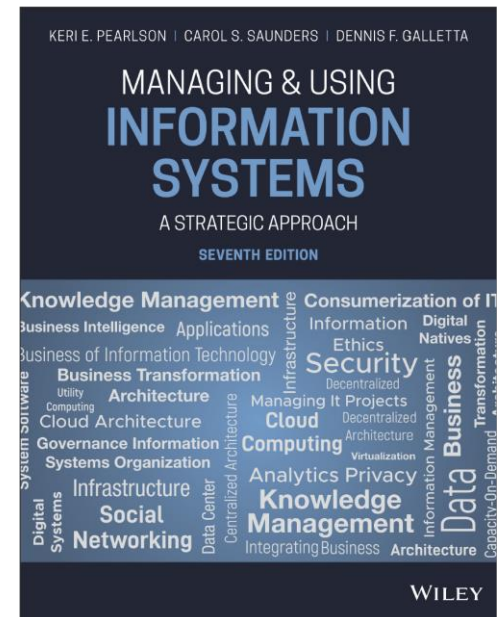
Managing and Using Information Systems: A Strategic Approach

Seventh Edition

Keri Pearlson, Carol Saunders, and Dennis Galletta

Chapter 4

Digital Systems and the Design of Work



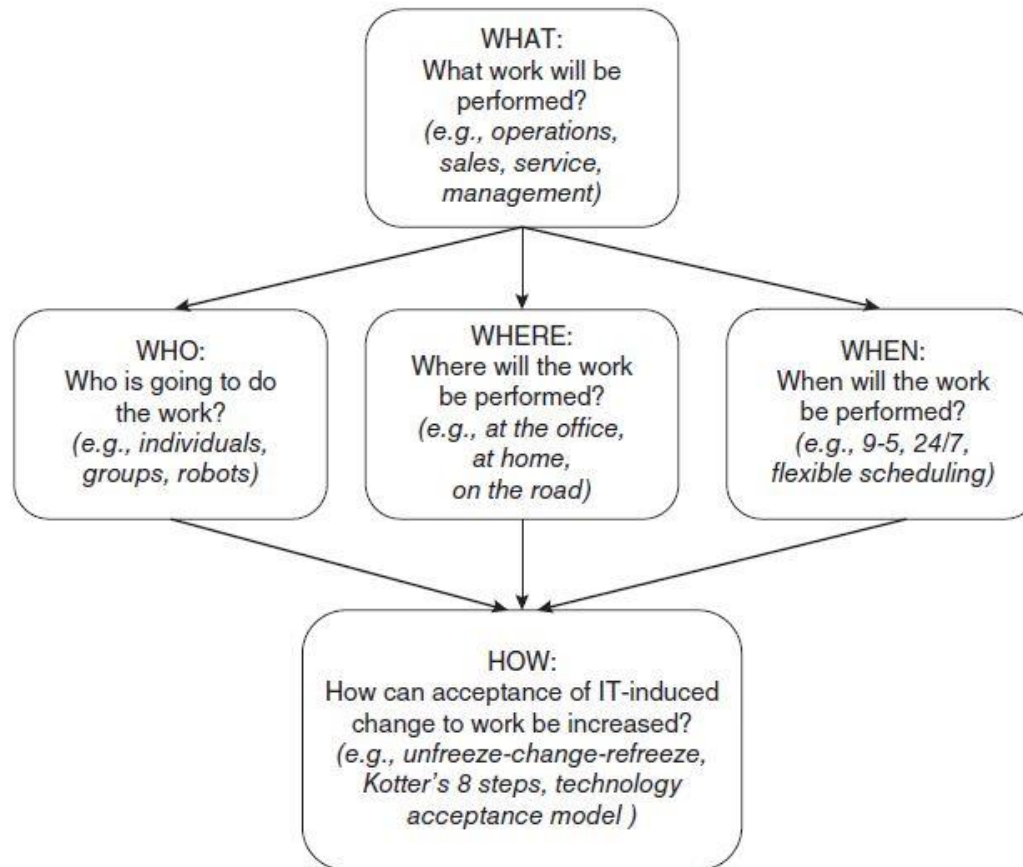
Chapter 4

Digital Systems and the Design of Work

American Express Opening Case

- What is the “Blue Work” program?
- What was the strategic thrust behind the Blue Work program?
- What are “hub,” “club,” “home,” and “roam” employees?
- What is the role of technology in these arrangements?
- What was the impact of Blue Work?
- Have other firms found roaming employment useful?

Work Design Framework

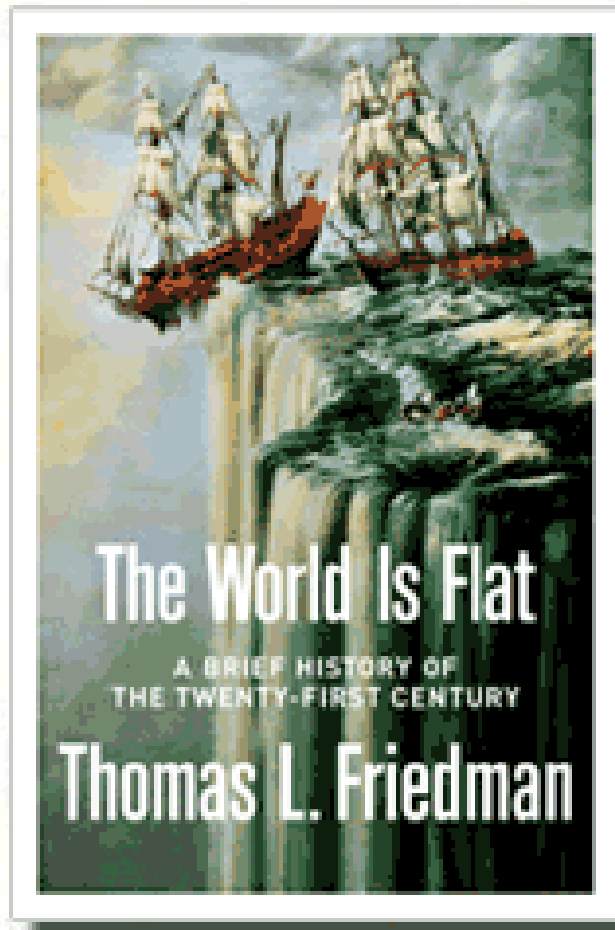


IT Has Changed Work

- IT has:
 - Created new types of work
 - Bureau of Labor Statistics: IT employment in the USA is at an all-time high (11.5 million in 2019)
 - New jobs such as:
 - Data scientists/data miners
 - Social media managers
 - Communications managers
 - Enabled new ways to do traditional work
 - Supported new ways to manage people

How IT Changes Traditional Work ¹

- Changes the way work is done
 - Broadens skills; faster but more tasks
 - Sometimes IT disconnects us from the tasks
 - Sometimes people can perform more strategic tasks
 - Few staff are engaged in order entry any longer
 - Crowdsourcing is now possible at very low cost (M.Turk)
- Changes how we communicate
 - More asynchronous and more irregular
 - Social networking has provided new opportunities for customer interaction
 - Collaboration allows a firm to look “big” with new tools



The key to success is for such companies “to take advantage of all the new tools for collaboration to reach farther, faster, wider and deeper.

How IT Changes Traditional Work ²

- Changes decision-making
 - Real-time information; more information available
 - Data mining can identify new insights
 - Ideas can be gleaned from social networks
 - **Middle management** ranks have shrunk as Leavitt/Whisler predicted
- Changes collaboration
 - Work is now **more team oriented**; more collaborative
 - **Sharing** is easier than ever, using multiple methods
 - **Crowdsourcing** can now provide quick answers from tens, hundreds, or even thousands of people(Ex: Verifone, Wikipedia, IdeaStorm)
 - We now can **disconnect PLACE and TIME** (Figure 4.2)

Collaboration Technologies Matrix

	Team Works at the Same Time	Team Works at Different Time
Team Works in the Same Place	Face-to-face meetings Meeting room technologies Document sharing systems (wikis) Team collaboration software suites	Electronic bulletin boards Document sharing systems (wikis) Team collaboration software suites
Team Works in Different Places	Video conferencing Chat rooms Texting (SMS) and instant messaging (IM) Document sharing systems (wikis) Team collaboration software suites	E-mail Microblogs (e.g., Twitter) Texting (SMS) and instant messaging (IM) Document sharing systems (wikis) Team collaboration software suites

FIGURE 4.2 Collaboration technologies matrix: examples of key enabling technologies.

Source: Adapted from Geraldine DeSanctis and R. Brent Gallupe, “A Foundation for the Study of Group Decision Support Systems,” *Management Science* 33, no. 5 (May 1987), 589–609.

How IT Changes Traditional Work ³

- New ways to connect
 - Many employees are always connected
 - Lines between work and play are now blurred
 - For many, home technologies are better than work technologies (BYOD)
- New ways to manage people
 - Behavior controls – direct supervision
 - Outcome controls – examining outcomes not actions
 - Personnel controls – pick the right person for the task
 - The digital approach provides new opportunities at any of those three levels (Fig. 4.3)

Changes to Supervision/Evaluation/ Compensation/Hiring

	Traditional Approach: Subjective Observation	Digital Approach: Objective Assessment
Supervision	It is personal and informal. Manager is usually present or relies on others to ensure that the employee is present and productive.	It is electronic or assessed by deliverables. As long as the employee is producing value, he or she does not need direct formal supervision.
Evaluation	Behavior controls are predominant. Focus is on process through direct observation. Manager sees how employee performs at work. Subjective (personal) factors are very important.	Outcome controls are predominant. Focus is on output by deliverable (e.g., produce a report by a certain date) or by target (e.g., meet a sales quota). Fewer subjective measures are used.
Compensation and Rewards	It is often individually based.	It is often team based or contractually spelled out.
Hiring	Hiring is done through meetings with HR personnel with little concern for computer skills.	It is often electronic with recruiting websites and electronic testing for more information-based work that requires a higher level of IT skills.

FIGURE 4.3 Changes to supervision, evaluations, compensation, and hiring.

Where Work is Done: Mobile and Virtual Work

- Much work can be done anywhere, anytime
- People desire the flexibility
- Telecommuting = teleworking = working from home or even in a coffee shop
- Mobile workers work from anywhere (often while traveling)
- Remote workers = telecommuters + mobile workers
- Virtual teams include remote workers as well as those in their offices, perhaps scattered geographically
- Virtual teams have a life cycle (Figure 4.4)

Key Activities in the Life Cycle of Teams

Phase	Preparation	Launch	Performance Management	Team Development	Disbanding
Key Activities	Mission statement Personnel selection Task design Rewards system Technology selection and installment	Kick-off meetings Getting acquainted Goal clarification Norm development	Leadership Communication Conflict resolution Task accomplishment Motivation Knowledge management Norm enforcement and shaping	Assessment of needs/deficits Individual and/ or team training Evaluation of training effects	Trust building Recognition of achievements Reintegration of team members

FIGURE 4.4 Key activities in the life cycle of teams.

Source: Adapted from Guido Hertel, Susanne Geister, and Udo Konradt, “Managing Virtual Teams: A Review of Current Empirical Research,” *Human Resource Management Review* 15, no. 1 (2005), 69–95.

Telecommuting: Global Status

- A poll of 11,300 employees in 22 countries: 1 in 6 telecommute
- When employees in 13 countries were asked if they need to be in the office to be productive:
 - Overall 39% said “yes”
 - But specific countries differed in the “yes” votes:
 - Only 7% in India, but
 - 56% in Japan
 - 57% in Germany

Drivers of Remote Work and Virtual Teams

Driver	Effect
Shift to knowledge-based work	Decouples work from any particular place
Changing demographics and lifestyle preferences	Workers desire geographic and time-shifting flexibility
New technologies with enhanced bandwidth	Remotely-performed work is practical and cost-effective
Reliance on web	Can stay connected 24/7
Energy concerns	Reduced commuting costs; real estate energy consumption; travel costs



Gen Z

Born: **1995-2015**
Age: **6-26 years**



Millennial

Born: **1980-1994**
Age: **27-41 years**



Gen X

Born: **1965-1979**
Age: **42-56 years**

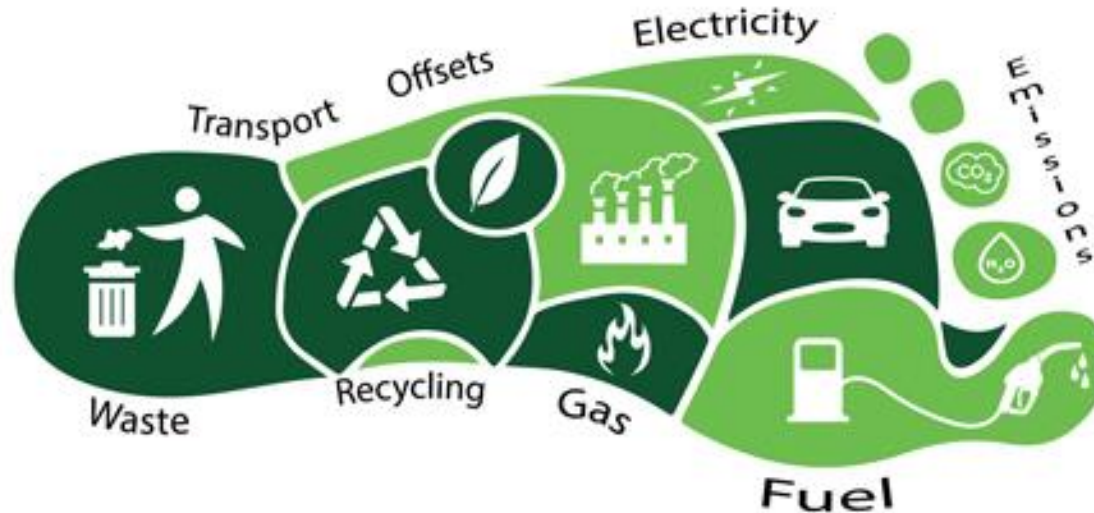


Baby Boomer

Born: **1944-1964**
Age: **57-77 years**

Carbon footprint

A carbon footprint is the total amount of greenhouse gases (including carbon dioxide and methane) that are generated by our actions



Some advantages and disadvantages of remote work

Advantages of Remote Work	Potential Problems
Reduced stress: better ability to meet schedules; less distraction at work	Increased stress: Harder to separate work from home life
Higher morale and lower absenteeism	Harder to evaluate performance
Geographic flexibility	Employee may become disconnected from company culture
Higher personal productivity	Telecommuters are more easily replaced by offshore workers
Housebound individuals can join the workforce	Not suitable for all jobs or employees
(Very) Informal Dress	Security might be more difficult

Virtual Teams

- Virtual Teams: geographically and/or organizationally dispersed coworkers:
 - Assembled using telecommunications and IT
 - Aim is to accomplish an organizational task
 - Often must be evaluated using outcome controls
- Why are they growing in popularity?
 - Information explosion: some specialists are far away
 - Enhanced bandwidths/fast connections to outsiders
 - Technology is available to assist collaboration
 - Less difficult to get relevant stakeholders together

Challenges Facing Virtual Teams


Challenges	Virtual Teams	Traditional Teams
Communications	<ul style="list-style-type: none"> Multiple time zones can lead to greater efficiency but can lead to communication difficulties and coordination costs (passing work). Non-verbal communication is difficult to convey 	<ul style="list-style-type: none"> Same time zone. Scheduling is less difficult. Teams may use richer communication media.
Technology	<ul style="list-style-type: none"> Proficiency is required in several technologies. Need electronic repositories to build organizational memory Need to align group structure and IT 	<ul style="list-style-type: none"> Support for face-to-face interaction without replacing it Electronic communications skills are not needed Skills and task-technology fit is less critical
Team Diversity	<ul style="list-style-type: none"> Members represent different organizations and/or cultures: <ul style="list-style-type: none"> Harder to establish a group identity. Necessary to have better skills More difficult to build trust, norms Impact of deadlines not always consistent 	<ul style="list-style-type: none"> More homogeneous members <ul style="list-style-type: none"> Easier group identity Easier to communicate

Communication Challenge

The rule of thumb is that “more communication is better than less” because it is very difficult to “overcommunicate.”

Managerial Issues In Telecommuting and Mobile Work

- **Planning, business and support tasks** must be **redesigned** to support mobile and remote workers
- **Training** should be offered so all workers can understand **the new work environment**
- Employees selected for telecommuting jobs must be **self-starters**

A profile photograph of Steve Jobs, wearing his signature black turtleneck and glasses, looking towards the right. His right hand is raised, holding a small object between his fingers.

It doesn't make sense to hire smart people and tell them what to do; we hire smart people so they can tell us what to do.

- Steve Jobs

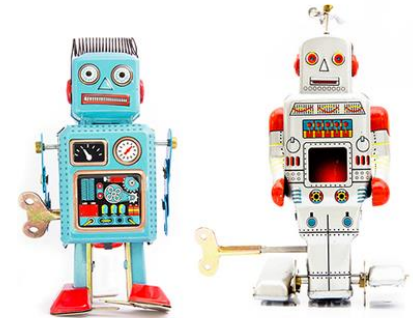
Managing the Challenges ¹

- Communications challenges
 - Policies and practices must support the work arrangements
 - Must prepare differently for meetings
 - Slides and other electronic material must be shared beforehand
 - **Soft-spoken people are difficult to hear**; managers must repeat key messages
 - Frequent communications are helpful (hard to “overcommunicate”)
- Technology challenges
 - Provide technology and support to remote workers
 - Use high quality web conferencing applications
 - Clarify time zones for scheduling
 - Information should be available for everyone (cloud storage can help)
 - Policies and norms about use of the technology can be important

Managing the Challenges ²

- Diversity challenges
 - Concept of time differs throughout the world
 - Anglo-American cultures view time as a continuum (deadlines are important; many prefer not to multitask)
 - Indian cultures have a cyclical view of time (deadlines are less potent; many prefer to multitask)
 - Team diversity might need nurturing:
 - Communications differences
 - Trust building
 - Group identity formation

Robots



Company veterans often say the genius of Amazon is the way it drives them to drive themselves. “If you’re a good Amazonian, you become an Amabot,” said one employee, using a term that means you have become at one with the system.

Gaining Acceptance For IT-induced Change

- Many changes might be a major concern for employees
- Changes might be resisted if they are viewed as negative impacts
- Several types of resistance:
 - Denying that the system is up and running
 - Sabotage by distorting or otherwise altering inputs
 - Believing and/or spreading the word that the new system will not change the status quo
 - Refusing to use the new system (if voluntary)

Stages and Steps in Change Management (Kotter)

Lewin's Stage	Unfreezing	Changing	Refreezing
Definition	Creating motivation to change	Providing stakeholders with new information, systems, products, or services	Reinforcing change by integrating stakeholders' changed behaviors and attitudes into new operations resulting from change
Kotter's Steps	<ol style="list-style-type: none"> 1. Establish a sense of urgency: Create a compelling reason why change is needed. 2. Create the guiding coalition: Select a team with enough expertise and power to lead the change. 3. Develop a vision and strategy: Use the vision and strategic plan to guide the change process. 4. Communicate the change vision: Devise and implement a communication strategy to consistently convey the vision. 	<ol style="list-style-type: none"> 5. Empower broad-based action: Encourage risk-taking and creative problem solving to overcome barriers to change. 6. Generate short-term wins: Celebrate short-term improvements and reward contributions to change effort. 7. Consolidate gains and produce more change: Use credibility from short-term wins to promote more change so that change cascades throughout the organization. 	<ol style="list-style-type: none"> 8. Anchor new approaches in the culture: Reinforce change by highlighting areas in which new behaviors and processes are linked to success.

FIGURE 4.8 Stages and steps in change management.

Source: Adapted from John Kotter, *Leading Change* (Boston, MA: Harvard Business School Press, 1996).



01 Create

Establish a feeling of urgency of hurriedness towards change.

03 Form

Develop a strategy to bring about change.

05 Enable

Empower employees for taking action to incorporate changes

07 Sustain

Capitalize of wins or gains in order to produce bigger results

02 Build

Formulate a guiding coalition

04 Enlist

Communicate or put forth the vision or strategy for change

06 Generate

Formulate and generate short-term goals

08 Institute

Incorporate new and better changes in workplace culture

Copyright

Copyright © 2020 John Wiley & Sons, Inc.

All rights reserved. Reproduction or translation of this work beyond that permitted in Section 117 of the 1976 United States Act without the express written permission of the copyright owner is unlawful. Request for further information should be addressed to the Permissions Department, John Wiley & Sons, Inc. The purchaser may make back-up copies for his/her own use only and not for distribution or resale. The Publisher assumes no responsibility for errors, omissions, or damages, caused by the use of these programs or from the use of the information contained herein.