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ПРОФЕССИОНАЛЬНО-ОРИЕНТИРОВАННЫЙ АНГЛИЙСКИЙ ЯЗЫК

Методические указания для развития навыков чтения и перевода
профессионально-ориентированных текстов для специальности
5В070300 – Информационные системы

Алматы 2015

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Данные методические указания предназначены для развития умений чтения и перевода технических текстов в области Информационных систем.

Методические указания включают в себя профессионально-ориентированный текстовый материал, упражнения и задания для усвоения терминов по данной специальности.

Материал может найти применение, как на аудиторных занятиях, так и в практике самостоятельной работы с целью формирования иноязычной профессиональной компетенции студентов – бакалавров специальности 5В070300.

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ПРОФЕССИОНАЛЬНО-ОРИЕНТИРОВАННЫЙ АНГЛИЙСКИЙ ЯЗЫК
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РЕЦЕНЗИЯ

на методические указания для развития навыков чтения и перевода профессионально-ориентированных текстов для специальности 5В070300 – Информационные системы старшего преподавателя Ж.К.Байгаскиной.

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Методические указания могут быть использованы в учебном процессе как для работы в аудитории под руководством преподавателя, так и внеаудиторной деятельности.

Материал представляет несомненный учебно-методический интерес и рекомендуется к изданию.

К.ф.н. доцент каф.ИЯ

В.С.Козлов

Unit 1

Memorize the words

backbone of organizations – принципиальная основа организации
to collect taxes – взимать\собрать налоги
to book a trip – заказывать билет на поездку
to track the stock – следить за ассортиментом товара
shipments – партия товара
cash register – кассовый аппарат
tax authorities – налоговый комитет
implementation medium – среда реализации
cohesive structure – сжатая структура
merits – заслуга, достоинство
input capture – входная фиксация
raw data – необработанные данные
raw input – необработанный ввод информации
feedback – связь производителя с потребителем, информация от потребителя

Text 1. Information systems

Do the following tasks:

1) Match English words and word combinations with their Russian equivalents.

Support of information systems, incoming shipments, cash register, to track the stock, decision making, make an inference from, forming a cohesive structure, raw data, raw input, feedback.

Информация от потребителя, необработанные данные, формулировать сплочённую структуру, поддержка информационных систем, кассовый аппарат, принятие решений, недавно поступившие партии товаров, следить за ассортиментом товара, необработанный ввод информации, сделать вывод из.

2) Make up 10 questions about the text and let your neighbour answer them, then change parts.

3) Give a written translation of the text into Russian.

4) Retell the text.

Information systems

Information systems have become the backbone of most organizations. Banks could not process payments, governments could not collect taxes, hospitals could not treat patients, and supermarkets could not stock their shelves without the support of information systems. In almost every sector – education, finance, government, health care, manufacturing, and businesses large and small – information systems play a prominent role. Every day work, communication,

information gathering, and decision making all rely on information technology (IT). When we visit a travel agency to book a trip, a collection of interconnected information systems is used for checking the availability of flights and hotels and for booking them. When we make an electronic payment, we interact with the bank's information system rather than with personnel of the bank. Modern supermarkets use IT to track the stock based on incoming shipments and the sales that are recorded at cash registers. Most companies and institutions rely heavily on their information systems. Organizations such as banks, online travel agencies, tax authorities, and electronic bookshops can be seen as IT companies given the central role of their information systems.

Information system has been defined in terms of two perspectives: one relating to its function; the other relating to its structure. From a functional perspective; an information system is a technologically implemented medium for the purpose of recording, storing, and disseminating linguistic expressions as well as for the supporting of inference making. From a structural perspective; an information system consists of a collection of people, processes, data, models, technology and partly formalized language, forming a cohesive structure which serves some organizational purpose or function.

The functional definition has its merits in focusing on what actual users-from a conceptual point of view do with the information system while using it. They communicate with experts to solve a particular problem. The structural definition makes clear that IS are socio-technical systems, i.e., systems consisting of humans, behavior rules, and conceptual and technical artifacts.

An information system can be defined technically as a set of interrelated components that collect (or retrieve), process, store, and distribute information to support decision making and control in an organization. In addition to supporting decision making, coordination, and control, information systems may also help managers and workers analyze problems, visualize complex subjects, and create new products.

Three activities in an information system produce the information that organizations need to make decisions, control operations, analyze problems, and create new products or services. These activities are input, processing, and output. Input captures or collects raw data from within the organization or from its external environment. Processing converts this raw input into a more meaningful form. Output transfers the processed information to the people who will use it or to the activities for which it will be used. Information systems also require feedback, which is output that is returned to appropriate members of the organization to help them evaluate or correct the input stage.

Information systems transform data into useful information and include both technology and people. An information system generally incorporates one or more computers and the software to control them. In this case, the information system is said to be a computerized information system.

Unit 2

Memorize the words

network support – сетевая поддержка
interconnected peripheral devices – взаимосвязанные внешние устройства
software package – пакет программного обеспечения
alphanumeric data – буквенно-цифровые данные события и сущность
comprehensiveness – обширность, полнота
non-redundancy – безызбыточность, отсутствие избыточности
intranet – интранет, компьютерная сеть предприятия
extranet – экстрасеть, сеть для электронного обмена
структурированными данными между партнёрами по бизнесу или между
подразделениями внутри организации
emphasizes – придавать особое значение, подчёркивать, акцентировать
twisted pair cable – кабель с витыми жилами

Text 2. What is a Computer-based Information System?

Do the following tasks:

- 1) Read the text and find sentences where the following terms are used. Translate them: основанная на применении вычислительной техники информационная система, взаимосвязанные внешние устройства, пакет программного обеспечения, буквенно-цифровые данные события и сущность, информационные ресурсы, ресурсы сети.
- 2) Look through the text. What information did you get about the Computer-based Information System?

What is a Computer-based Information System?

A computer-based information system (CBIS) is an information system that uses computer technology to perform some or all of its intended tasks. Such a system can include as little as a personal computer and software. Or it may include several thousand computers of various sizes with hundreds of printers, plotters, and other devices, as well as communication networks (wire-line and wireless) and databases. In most cases an information system also includes people. The basic components of information systems are listed below. Note that not every system includes all these components.

Components of Information Systems.

1. *Resources of people:* (end users and IS specialists, system analyst, programmers, data administrators etc.).
2. *Hardware:* (Physical computer equipments and associate device, machines and media).
3. *Software:* (programs and procedures).
4. *Data:* (data and knowledge bases), and

5. *Networks*: (communications media and network support).

1. *People Resources*

a) End users: (also called users or clients) are people who use an information system or the information it produces. They can be accountants, salespersons, engineers, clerks, customers, or managers. Most of us are information system end users.

b) IS Specialists: people who actually develop and operate information systems. They include systems analysts, programmers, testers, computer operators, and other managerial, technical, and clerical IS personnel. Briefly, systems analysts design information systems based on the information requirements of end users, programmers prepare computer programs based on the specifications of systems analysts, and computer operators operate large computer systems.

2. *Hardware Resources*

a) Machines: as computers and other equipment along with all data media, objects on which data is recorded and saved.

b) Computer systems: consist of variety of interconnected peripheral devices. Examples are microcomputer systems, mid-range computer systems, and large computer systems.

3. *Software Resources*

Software Resources includes all sets of information processing instructions. This generic concept of software includes not only the programs, which direct and control computers but also the sets of information processing (procedures). Software Resources includes:

a) System software, such as an operating system.

b) Application software, which are programs that direct processing for a particular use of computers by end users.

c) Procedures, which are operating instructions for the people, who will use an information system. Examples are instructions for filling out a paper form or using a particular software package.

4. *Data Resources*

Data resources include data (which is raw material of information systems) and database. Data can take many forms, including traditional alphanumeric data, composed of numbers and alphabetical and other characters that describe business transactions and other events and entities. Text data, consisting of sentences and paragraphs used in written communications; image data, such as graphic shapes and figures; and audio data, the human voice and other sounds, are also important forms of data.

Data resources must meet the following criteria:

a) Comprehensiveness: means that all the data about the subject are actually present in the database.

b) Non-redundancy: means that each individual piece of data exists only once in the database.

c) Appropriate structure: means that the data are stored in such a way as to minimize the cost of expected processing and storage.

The data resources of IS are typically organized into:

a) Processed and organized data-Databases.

b) Knowledge in a variety of forms such as facts, rules, and case examples about successful business practices.

5. Network Resources

Telecommunications networks like the Internet, intranets, and extranets have become essential to the successful operations of all types of organizations and their computer-based information systems. Telecommunications networks consist of computers, communications processors, and other devices interconnected by communications media and controlled by communications software. The concept of Network Resources emphasizes that communications networks are a fundamental resource component of all information systems.

Network resources include:

a) Communications media: such as twisted pair wire, coaxial cable, fiber-optic cable, microwave systems, and communication satellite systems.

b) Network support: This generic category includes all of the people, hardware, software, and data resources that directly support the operation and use of a communications network. Examples include communications control software such as network operating systems and Internet packages.

Unit 3

Memorize the words

facilitator of organizational activities – куратор организационной деятельности

knowledgeable – хорошо осведомлённый, информированный

emerging areas – развивающиеся сферы

e-commerce – электронная торговля, электронная коммерция (коммерческая деятельность, осуществляемая через интернет)

m-commerce – м-коммерция, коммерция с использованием сотовой связи

computer software applications engineers – разработчики прикладного программного обеспечения

computer support specialists – специалисты по технической поддержке

computer software systems engineers – разработчики системного программного обеспечения

network and computer systems administrators – администратор сети и компьютерных систем

data communication system – система передачи данных

desktop publishers – специалисты по работе с настольными издательскими средствами

Text 3. Information Technology and Information Systems

Do the following tasks:

- 1) Think of questions to the following sentences.
 - a) The term IT in its broadest sense used to describe an organization's collection of information systems, their users, and the management that oversees them.
 - b) A major role of IT is being a facilitator of organizational activities and processes.
 - c) You should learn about IT because being knowledgeable about information technology can also increase employment opportunities.
 - d) Within the last few years, many universities have started e-commerce or e-business degrees.
- 2) Give a written translation of the text into Russian.
- 3) Retell the text.

Information Technology and Information Systems

Information technology broadly defined as the collection of computer systems used by an organization. Information technology, in its narrow definition, refers to the technological side of an information system. It includes the hardware, software, databases, networks, and other electronic devices. It can be viewed as a subsystem of an information system. Sometimes, though, the term information technology is also used interchangeably with information system.

The term IT in its broadest sense used to describe an organization's collection of information systems, their users, and the management that oversees them.

A major role of IT is being a facilitator of organizational activities and processes. That role will become more important as time passes. Therefore, it is necessary that every manager and professional staff member learn about IT not only in his or her specialized field, but also in the entire organization and in inter-organizational settings as well.

Obviously, you will be more effective in your chosen career if you understand how successful information systems are built, used, and managed. You also will be more effective if you know how to recognize and avoid unsuccessful systems and failures. Also, in many ways, having a comfort level with information technology will enable you, off the job and in your private life, to take advantage of new IT products and systems as they are developed. (Wouldn't you rather be the one explaining to friends how some new product works, than the one asking about it?) Finally, you should learn about IT because being knowledgeable about information technology can also increase employment opportunities. Even though computerization eliminates some jobs, it also creates many more.

The demand for traditional information technology staff – such as programmers, systems analysts, and designers – is substantial. In addition, many excellent opportunities are appearing in emerging areas such as the Internet and e-

commerce, m-commerce, network security, object-oriented programming, telecommunications, multimedia design, and document management.

According to a study by the U.S. Bureau of Labor Statistics, each of the top seven fastest-growing occupations projected through 2010 fall within an IT- or computer related field. These top seven occupations are:

- 1) Computer software applications engineers
- 2) Computer support specialists
- 3) Computer software systems engineers
- 4) Network and computer systems administrators
- 5) Network systems and data communications analysts
- 6) Desktop publishers
- 7) Database administrators

To exploit the high-paying opportunities in IT, a college degree in any of the following fields, or combination of them, is advisable: computer science, computer information systems (CIS), management information systems (MIS), electronic commerce, and e-business. Within the last few years, many universities have started e-commerce or e-business degrees. Many schools offer graduate degrees with specialization in information technology.

Unit 4

Memorize the words

profound effect – сильное воздействие

supply chains – цепочка поставок, сеть поставщиков; канал поставок

core competencies – профессиональные качества, определяющие успех компании на рынке

outsource – передавать (часть бизнес-процесса) независимому подрядчику;

entrepreneur – предприниматель, антрепренёр

word-of-mouth – передаваемый из уст в уста

Text 4. Organizational impacts of information systems

Do the following tasks:

1) Give the Russian variant of the following expressions: computerized information systems, the way companies interact and compete, core competencies, network organization, cluster organization, the role of consumers.

2) Make up the sentences with the words above.

Organizational impacts of information systems

Computerized information systems, particularly since the arrival of the Web and mobile computing, have had a profound effect on organizations, economies,

and societies, as well as on individuals whose lives and activities are conducted in these social aggregates.

Several essential organizational capabilities are enhanced by information systems. These systems provide support for business operations; for individual and group decision making; for new product development; for relationships with customers, suppliers, and partners; for pursuit of competitive advantage; and, in some cases, for the business model itself. Information systems bring new options to the way companies interact and compete, the way organizations are structured, and the way workplaces are designed. In general, use of Web-based information systems can significantly lower the costs of communication among workers and firms and cost-effectively enhance the coordination of supply chains or webs. This has led many organizations to concentrate on their core competencies and to outsource other parts of their value chain to specialized companies. The capability to communicate information efficiently within a firm has led to the deployment of flatter organizational structures with fewer hierarchical layers.

Nevertheless, information systems do not uniformly lead to higher profits. Success depends both on the skill with which information systems are deployed and on their use being combined with other resources of the firm, such as relationships with business partners or superior knowledge of the industry.

The use of information systems has enabled new organizational structures. In particular, so-called virtual organizations have emerged that do not rely on physical offices and standard organizational charts. Two notable forms of virtual organizations are the network organization and the cluster organization.

In a network organization, long-term corporate partners supply goods and services to and through a central hub firm. Together, a network of small companies can present the appearance of a large corporation. Indeed, at the core of such an organization may be nothing more than a single entrepreneur supported by only a few employees. Thus, network organization forms a flexible ecosystem of companies, whose formation and work is organized around Web-based information systems.

In a cluster organization, the principal work units are permanent and temporary teams of individuals with complementary skills. Team members, who are often widely dispersed around the globe, are greatly assisted in their work by the use of Web resources, corporate intranets, and collaboration systems. Global virtual teams are able to work around the clock, moving knowledge work electronically “to follow the Sun.” Information systems delivered over mobile platforms have enabled employees to work not just outside the corporate offices but virtually anywhere. “Work is the thing you do, not the place you go to” has become the slogan of the emerging new workplace. Virtual workplaces include home offices, regional work centers, customers’ premises, and mobile offices of people such as insurance adjusters. Employees who work in virtual workplaces outside their company’s premises are known as telecommuters.

The role of consumers has changed, empowered by the Web. Instead of being just passive recipients of products, they can actively participate with the producers

in the co creation of value. By coordinating their collective work using information systems, individuals have created such products as open-source software and online encyclopedias. The value of virtual worlds and massively multiplayer online games has been created largely by the participants. The electronic word-of-mouth in the form of reviews and opinions expressed on the Web can make or break products. In sponsored co-creation, companies attract their customers to generate and evaluate ideas, develop new products, and promote the existing goods and services.

Unit 5

Memorize the words

transaction processing system – система обработки транзакций
management information system – управленческая информационная система (для обеспечения информацией руководящего персонала)
decision support system – система поддержки принятия решений, СППР
executive information system – управленческая информационная система (предоставляющая руководству информацию для принятия управленческих решений)
accounts payable – счета к оплате
accounts receivable – счета к получению
query language – язык запросов, язык управления данными, используемый для получения информации из БД
facsimile – 1) телефакс, факс (устройство электронной передачи документов) 2) факсимиле; (точная) копия (массива данных или программ)

Text 5. Information system categories

Do the following tasks:

- 1) Read and translate the text.
- 2) Describe the categories of information systems.
- 3) Make up 10 questions about the text and let your neighbour answer them, then change parts.

Information system categories

Now there are several approaches to solving a certain problem. There are also several types of information systems, which are developed to overcome specific problems, besides trying to fulfill the user's requests in general. In a large organization, solving business problems such as the management of staff salaries, processing of business data and others is normally done by the use of large computers with internal and external networks.

Every type of information system has a role to play. If you look at the functions and the scope of usage, information systems can be divided into six main categories such as those provided in Figure 1.8 below.

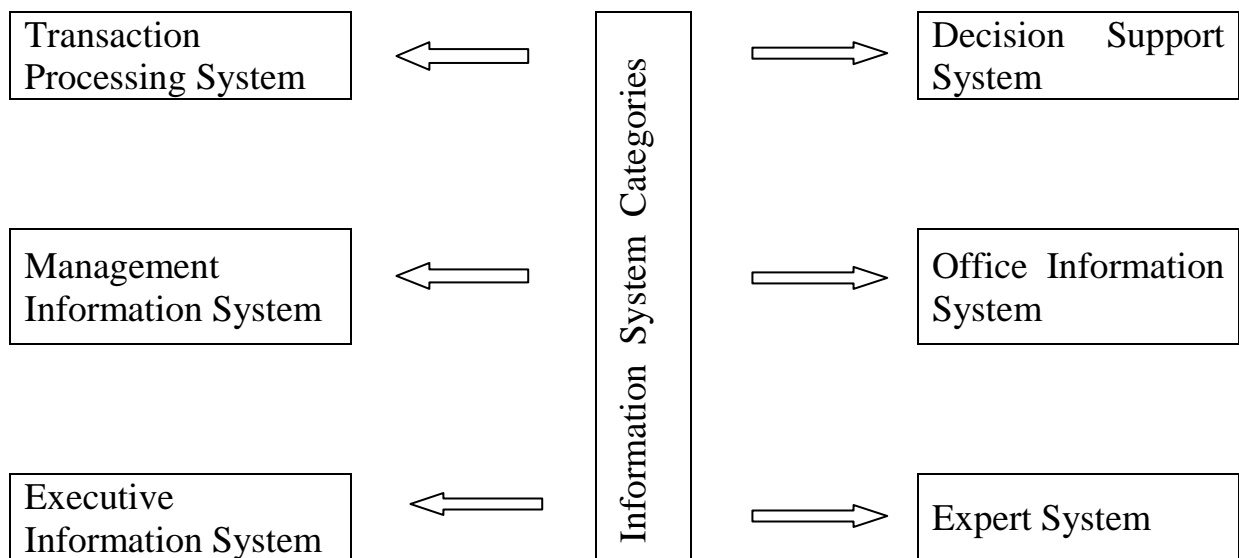


Figure 1.8 – Categories of information system

To understand the six main categories of information systems, Table 1.2 gives the explanation for each category.

Table 1.2 – Information System Categories

System Category	Explanation
Transaction Processing System	<ol style="list-style-type: none"> 1. Better known as TPS and is one of the first systems to be automated. 2. Can access and record information about all transactions related to the organization. 3. Transactions occur whenever there exist activities involving sales order processing, accounts receivable, accounts payable, inventory and ordering as well as payroll. 4. These transactions involve credit and debit in the company's ledger account. 5. The output from this transaction is the account statement, which is used to generate financial reports. 6. TPS now uses the latest technology which uses the E-commerce concept. This is a new challenge in the field of transaction processing which begins to shift to the on-line transaction processing system.
Management (Reporting) Information System	<ol style="list-style-type: none"> 1. This system will take the information that has been extracted from TPS and generate reports which are required by the management for planning and controlling a company's business. 2. This system is capable of fulfilling the needs of management in acquiring the information that: <ol style="list-style-type: none"> (a) is brief and useful.

	(b) can be obtained and processed at the right time to make a decision.
Executive Information System	<ol style="list-style-type: none"> 1. A decision support system specifically used by the executive management in making strategic decisions. 2. It is a tool that provides online access directly to the relevant information, in the format that is useful and can be browsed. 3. Relevant information is timely, precise and useful in business aspects, according to the interest of certain managers. 4. Useful format, and can be browsed easily; will mean that the system has been specially built for the use of individuals who have little time to spare, are less skillful in using the keyboard and less experienced with computers. 5. This system can be surfed easily so that managers can identify strategic issues and can then explore information for getting the sources about those issues. 6. It is also an information system that combines the features of information reporting system and decision support system. It focuses on fulfilling the strategic information needs of the top management.
Decision Support System	<ol style="list-style-type: none"> 1. The main focus of this information system is for the effectiveness of the manager in analyzing the information and making a decision. 2. It is used for handling decisions that are not structured, i.e. decisions which are made when an emergency happens. 3. This system uses a database management system, query language, financial modeling, electronic spread sheet, statistical analysis program, report generator or graphic software for supplying the information needed.
Office Information System	<ol style="list-style-type: none"> 1. Office automation is wider than word processing and form processing. 2. This information system covers activities in the office, which can improve work flow and communication among workers, whether inside or outside the office. 3. The focus of this system is on the collection of information for whoever needs it. 4. The functions of this system are word processing, e-mails, work group programming, work group scheduling, facsimile processing, e-document, imaging and management of work flow.
Expert System	<ol style="list-style-type: none"> 1. It is a program that produces a decision which is almost similar to decisions made by an expert in a certain discipline. 2. This information system can imitate the way humans think and consider in making a decision. 3. An expert system will combine the use of knowledge, facts and techniques to make a decision.

	<p>4. An expert can always give a certain decision which is accurate as well as ensuring maximum benefit to all the people concerned. Unfortunately, the sources for expert services are limited.</p> <p>5. Realizing the high value of knowledge and the expertise owned by the expert, researchers have tried to transfer and save in the computers the knowledge and expertise owned by the experts.</p> <p>6. Through this work, the expert system is made.</p>
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Unit 6

Memorize the words

time span – промежуток времени

preliminary design – технический проект, стадия работы над [программным] проектом, предшествующая рабочему проекту

layout – схема, план, планирование, разработка (плана действий)

flowchart – маршрутная карта, схема организации производства

decision table – таблица решений

fraud prevention – защита, предохранение от мошенничества, жульничество

backup systems – подсистема резервного копирования, набор аппаратных и программных средств для выполнения процедур сохранения и восстановления файлов

grid chart – таблица, связывающая вводимые в ячейки данные с соответствующими прикладными программами

Text 6. Information Systems Design and Programming

Do the following tasks:

- 1) Give a written translation of the text into Russian.
- 2) Retell the text.

Information Systems Design and Programming

For smaller design projects, systems design can be done in one stage. All of the steps and procedures described in this unit can be accomplished by the same design team over a given time span. For larger design projects, on the other hand, design is broken down into two phases. During the first phase, preliminary design, the overall system is investigated from a general point of view. During the second phase, detailed design, the steps of design are done in such a way that the new system can be acquired and implemented. This means that all reports and documents have to be specified in detail, that the inputs have to be specified and located, that the exact layout of all data on storage devices has to be developed, and so on.

For small companies or minor systems, design can be almost trivial. If you are considering the acquisition of a new piece of equipment, such as a terminal, there may be little design work involved. You already know exactly, what you want. It is simply a matter of going through the acquisition steps to get the best prices and features. On the other hand, if you are designing a completely new data processing system to handle such activities as payroll, accounts receivable, accounts payable, inventory control, distribution and warehousing, and numerous reports and documents for management, the design stage can be rather long and tedious. For these larger and longer projects, a systematic approach is needed. This approach should include general design considerations, evaluation and selection procedures, and development of written contracts when equipment and services are to be obtained from outside sources.

A large design effort requires a number of general design considerations, including the following:

- 1) Organizational constraints.
- 2) Functional design.
- 3) Output design.
- 4) Input design.
- 5) Processing design.
- 6) File and data base design.
- 7) Procedures design.
- 8) Personnel and job design

The first step in design is to lay out various restrictions and constraints placed upon you by the organization. Companies have limited time to develop new systems, limited financial resources, limited man power, limited equipment, and limited procedures. Being too conservative can also limit the overall effectiveness of the new system. You need to be as realistic and accurate as possible in specifying true organizational restrictions and constraints.

Functional design is a layout of the major functions of the organization. For example, a wood products company may perform two overall functions-one to manufacture paper products and the other to manufacture timber products. Each of these two major functions can be further subdivided into what the company produces. A functional chart can be developed to reveal the major functions and their sub functions. This functional chart is very similar (and in some cases almost identical) to the company's organizational chart.

Once the functional chart has been developed, the desired information or output for each function and sub- function can be determined. When a large number of managers and decision makers is to be involved, small groups can be formed that analyze needs for their particular function. Each output from the computer for each functional area should be described with a great amount of detail and precision. The detailed layout of every report and output, the number of times the report is to be produced, how the report is to be distributed, and who should receive the various reports are described in detail. A short paragraph can be written describing each

report, and in some cases, a layout chart or graphic picture can be used to reveal how each output should be constructed.

After managers have described in detail what they want from the new computerized system, it will be up to the data processing personnel to determine the best way to generate these reports and outputs. Managers should still be involved, however, in monitoring and controlling these activities, which include input, processing, file and data base design, and personnel selection and job design. Once data processing personnel know what managers want, they can work backwards to determine the input data needed to generate various reports and outputs. Layout charts can be used to describe the format of the input data. Next, processing design is done. This describes in detail how the input data is to be manipulated to produce the desired reports and documents. Processing design can be done with the use of such tools as flowcharts and decision tables. Once processing design is complete, file and data base design can be undertaken. File and data base design describes exactly how all the data is to be stored on the system.

Procedures design is another important and often overlooked area of designing a new computerized system. This involves developing rules, regulations, and guidelines that are to be used while operating the new system. Computer security, crime and fraud prevention, and privacy policies are developed during procedures design as well.

Another key design consideration is personnel. For large and complex designs, new data processing personnel are usually needed to make the new system effective and operational. Personnel and job design, which is typically done by the data processing manager, describes what new people are required or how existing job titles and responsibilities are to be changed to accommodate the new computerized system.

Another important part of design is to determine which backup systems are required. In general, everything should have a backup, including all hardware, software, data, personnel, and supplies and facilities. What to do in case of a computer-related disaster should also be considered in the design phase.

The final design consideration is documentation. The documentation of the new system is very similar to the documentation of the existing system. Tools such as flowcharts, decision tables, grid charts, and so on can be employed.

Unit 7

Memorize the words

evolve – развёртывать, раскручивать; развивать, выводить

leading-edge technologies – передовая технология; перспективная технология

decision support system – система поддержки принятия решений, СППР

major impact – более сильное воздействие; влияние

major payoff – основная платёжная функция

managerial judgment – административные оценки, суждения
emphasis – выразительность, сила, ударение

Text 7. Management Information Systems

Do the following tasks:

- 1) Do a translation of the text into Russian.
- 2) Make up 10 questions about the text and let your neighbor answer them, then change parts.

Management Information Systems

The field of Management Information Systems (MIS) addresses the effective use of human and computer resources to realize important business objectives. MIS professionals are responsible for developing information systems that provide accurate and timely information to all levels of decision-making in a business organization. MIS has evolved into an exciting area of study in which students are exposed to leading-edge technologies and trained in their deployment. With information systems permeating every functional area of business, this knowledge has become an essential component of a student's educational preparation.

MIS and DSS

A management information system (MIS) is an organized collection of people, procedures, and devices used to provide information. This information can relate to internal and external intelligence, and it can assist with planning, staffing, organizing, directing, and controlling. The overall purpose of a management information system is to provide the right information to the right manager or decision maker at the right time. As defined, a management information system is a specialized data processing system. All management information systems are also data processing systems, but only those data processing systems that provide useful information are considered management information systems.

A decision support system (DSS) is an organized collection of people, procedures, and devices used to support decision making. While decision support systems and management information systems appear to be the same, there are important differences. The major impact of a management information system is on structured tasks, and the major payoff has been to improve efficiency. In many cases, managers play a passive role in the development of the system. A decision support system has an impact on both structured tasks and unstructured tasks that require managerial judgment, and the major payoff has been to improve effectiveness. In addition, managers play an active role in the development and implementation of the system. A decision support system works from a managerial perspective, and it recognizes that different managerial styles and decision types require different systems. A decision support system can have a significant impact on the decision-making process, while a management information system does not. The overall emphasis is to support rather than replace managerial decision making.

Unit 8

Memorize the words

preliminary investigation – предварительное изучение

initiate – вводить в курс дела, знакомить

inherent – обязательно присущий, неотъемлемый

retrieval of information – поиск или восстановление информации

consistency – логичность, последовательность

lock in – закреплять, блокировать

lockout – блокировка (запрещение входа в систему нежелательным пользователям)

Senior Executive – глава исполнительной власти, администратор

primary source of project request – первоначальный источник\отправитель заказа\заявки\требования на проектирование

Text 8. Project selection

Do the following tasks:

1) Make up a list of new terms you can find in the text. Translate them into Russian.

2) Read the text. Translate it into Russian.

Project selection

Systems analysts do not start working on any projects they desire. They receive a lot of requests from the management for starting different types of projects. When projects are formalized, the systems analysts, under the management's direction, conduct a preliminary investigation to analyze the reasons for the request and collect various facts to respond to the request in a systematic way. Some projects are feasible, while others many not be feasible for various reasons.

Why System Projects?

Systems projects are initiated for different reasons. The most important reasons are:

1) Capability

Business activities are influenced by an organization's ability to process transactions quickly and efficiently. Information systems add capability in three ways:

a) Improved processing speed: The inherent speed with which computers process data is one reason why organizations seek the development of systems projects.

b) Increased volume: Provide capacity to process a greater amount of activity, perhaps to take advantage of new business opportunities.

c) Faster retrieval of information: Locating and retrieving information from storage. The ability in conducting complex searches.

2) *Control*

a) Greater accuracy and consistency: Carrying out computing steps, including arithmetic, correctly and consistently.

b) Better security: Safeguarding sensitive and important data in a form that is accessible only to authorized personnel.

3) *Communication*

a) Enhanced communication. Speeding the flow of information and messages between well as within offices. This includes the transmission of documents within offices.

b) Integration of business ideas: Coordinating business activities taking place in separate areas of an organization, through capture and distribution of information.

4) *Cost*

a) Monitor costs: Tracking the costs of labor, goods and overhead is essential to determine whether a firm is performing in line with expectations – within budget.

b) Reduce costs: Using computing capability to process data at a lower cost than possible with other methods, while maintaining accuracy and performance levels.

5) *Competitiveness*

a) Lock in customers: changing the relationship with the services provided to customers in such a way that they will not think of changing suppliers.

b) Lockout competitors: Reducing the chances of entering the competitors in the same market because of good information systems being used in the organization.

c) Improve arrangements with suppliers: Changing the pricing, service or delivery arrangements, or relationship between suppliers and the organization to benefit the firm.

d) New product development: Introducing new products with characteristics that use or are influenced by information technology.

Sources of Project Requests

There are mainly four primary sources of project requests. The requesters inside the organization are: Department Managers, Senior Executives and Systems Analysts. In addition, government agencies outside the organization may also ask for information systems projects.

Requests from Department Managers

Frequently, department managers who deal with day-to-day business activities are looking for assistance within their departments. They are often not satisfied with the amount of time that the staff takes to complete the job. Sometimes, they feel that the staff members are involved in duplication of work also. In this case, the manager will discuss this problem with other administrators regarding their clerical as well as processing work and persuade higher authority to approve the development of a computer based system for office administration.

Requests from Senior Executives

Senior executives like presidents, vice-presidents usually have more information about the organization as compared to departmental managers. Since these executives manage the entire organization, so naturally they have broader responsibilities. Obviously, systems project requests submitted by them carry more weight and are generally broader in scope also.

Requests from System Analysts

Sometimes systems analysts find areas where it is possible to develop projects. In such cases, they may prefer either writing systems proposal themselves or encouraging a manager to allow the writing of a proposal on their behalf. For instance, in an organization, an analyst who sees that the library information system takes more time in processing and is inefficient, may prepare a project proposal for a new library information system. By the direction of the analyst who is fully aware about the new technology that improves the existing library information-system, the librarian may initiate the development of information system to the higher authority for approval.

Requests from Outside Group

Developments outside the organization also lead to project requests. For example, government contractors are required to use special cost accounting systems with government stipulated features. Generally, it has been observed that new demands from external groups bring about project requests, either for new systems or changes in current ones. Project requests originated from this source are also quite important.

It is often easy to overlook the initial routing of project initiation. But it is generally accepted that someone will start the request. Often there are different requests from different sources, but all aimed at ensuring the informational efficiency of the organization. It is vital to the systems analyst to ensure that these different requests are all catered for since they reflect the various segments of the organization.

Unit 9

Memorize the words

conflict management – регулирование конфликтов

order department – отдел заказов

end product – конечный (промышленный) продукт, готовый продукт

service request – запрос на обслуживание, посылаемый приложением операционной системе

pine valley furniture – сосновая долина для изготовления мебели

purchasing fulfillment system – система осуществления покупки

Text 9. Managing the Information Systems Project

Do the following tasks:

- 1) Read the text and find sentences where the following terms are used. Translate them: руководитель проекта, создание и внедрение имеющего успех проект, системные сервисы по запросу на обслуживание, система осуществления покупки, воспользоваться возможности деловой активности, создание сложной информационной системы.
- 2) Give the written translation of the text.

Managing the Information Systems Project

Project management is an important aspect of the development of information systems and a critical skill for a systems analyst. The focus of project management is to ensure that systems development projects meet customer expectations and are delivered within budget and time constraints.

The project manager is a systems analyst with a diverse set of skills – management, leadership, technical, conflict management, and customer relationship – who is responsible for initiating, planning, executing, and closing down a project. As a project manager, your environment is one of continual change and problem solving. In some organizations, the project manager is a very experienced systems analyst, whereas in others, both junior and senior analysts are expected to take on this role, managing parts of a project or actively supporting a more senior colleague who assumes the project manager role. Understanding the project management process is a critical skill for your future success.

Creating and implementing successful projects requires managing the resources, activities, and tasks needed to complete the information systems project. A project is a planned undertaking of a series of related activities to reach an objective that has a beginning and an end. The first question you might ask yourself is “Where do projects come from?” and, after considering all the different things that you could be asked to work on within an organization, “How do I know which projects to work on?” The ways in which each organization answers these questions vary.

In the rest of this section, we describe the process followed by Juanita Lopez and Chris Martin during the development of Pine Valley Furniture’s Purchasing Fulfillment System. Juanita works in the Order department, and Chris is a systems analyst.

Juanita observed problems with the way orders were processed and reported: Sales growth had increased the workload for the Manufacturing department, and the current systems no longer adequately supported the tracking of orders. It was becoming more difficult to track orders and get the right furniture and invoice to the right customers. Juanita contacted Chris, and together they developed a system that corrected these Ordering department problems.

The first deliverable, or end product, produced by Chris and Juanita was a System Service Request (SSR), a standard form PVF uses for requesting systems development work. *Figure 3-2 shows an SSR for a purchasing fulfillment system.* The form includes the name and contact information of the person requesting the system, a statement of the problem, and the name and contact information of the liaison and sponsor.

This request was then evaluated by the Systems Priority Board of PVF. Because all organizations have limited time and resources, not all requests can be approved. The board evaluates development requests in relation to the business problems or opportunities the system will solve or create; it also considers how the proposed project fits within the organization's information systems architecture and long-range development plans. The review board selects those projects that best meet overall organizational objectives. In the case of the Purchasing Fulfillment System request, the board found merit in the request and approved a more detailed feasibility study. A feasibility study, which is conducted by the project manager, involves determining if the information system makes sense for the organization from an economic and operational standpoint. The study takes place before the system is constructed.

A graphical view of the five steps followed during the project initiation of the Purchasing Fulfillment System:

- 1) Juanita observed problems with existing purchasing system.
- 2) Juanita contacted Chris within the IS development group to initiate a System Service Request.
- 3) SSR was reviewed and approved by Systems Priority Board.
- 4) Steering committee was assigned to oversee project.
- 5) Detailed project plan was developed and executed.

In summary, systems development projects are undertaken for two primary reasons: to take advantage of business opportunities and to solve business problems. Taking advantage of an opportunity might mean providing an innovative service to customers through the creation of a new system. For example, PVF may want to create a Web site so that customers can easily access its catalog and place orders at any time. Solving a business problem could involve modifying the way an existing system processes data so that more accurate or timely information is provided to users. For example, a company such as PVF may create a password-protected intranet site that contains important announcements and budget information. Of course, projects are not always initiated for the aforementioned rational reasons (taking advantage of business opportunities or solving business problems). For example, in some instances, organizations and government undertake projects to spend resources, to attain or pad budgets, to keep people busy, or to help train people and develop their skills. Our focus in this chapter is not on how and why organizations identify projects but on the management of projects once they have been identified.

Once a potential project has been identified, an organization must determine the resources required for its completion. This is done by analyzing the scope of the

project and determining the probability of successful completion. After getting this information, the organization can then determine whether taking advantage of an opportunity or solving a particular problem is feasible within time and resource constraints. If deemed feasible, a more detailed project analysis is then conducted. As you will see, the ability to determine the size, scope, and resource requirements of a project is just one of the many skills that a project manager must possess. A project manager is often thought of as a juggler keeping aloft many balls, which reflect the various aspects of a project's development.

To successfully orchestrate the construction of a complex information system, a project manager must have interpersonal, leadership, and technical skills. Note that many of the skills are related to personnel or general management, not simply technical skills.

Project management: A controlled process of initiating, planning, executing, and closing down a project.

Several activities must be performed during each of these four phases. Following this formal project management process greatly increases the likelihood of project success.

Unit 10

Memorize the words

initiation – введение, основание, учреждение

initial core of project team members – участники первоначальной группы, работающие над ядром проекта

retail stores – магазин для розничной продажи товаров

project funding – проектное финансирование (привлечение средств для реализации отдельных проектов)

repository – хранилище информации об объектах

stakeholder – заинтересованная сторона, участник проекта

charter – устав, документ, разрешающий создание компании и других корпораций

compulsory purchase system – система обязательных закупок

deadlines – срок окончания какой-л. работы, завершения проекта

Text 10. Initiating a Project

Do the following tasks:

1) Read the text and find sentences where the following terms are used. Translate them: участники первоначальной группы, проектное финансирование, хранилище информации об объектах, система обязательных закупок, завершения проекта.

2) Make up 10 questions about the text and let your neighbour answer them, then change parts.

3) Give a written translation of the text into Russian.

Initiating a Project

During project initiation, the project manager performs several activities to assess the size, scope, and complexity of the project and to establish procedures to support subsequent activities. Depending on the project, some initiation activities may be unnecessary and some may be very involved. The types of activities you will perform when initiating a project are summarized in Figure 3-5 and described next.

Figure 3-5. *Six project initiation activities:*

- 1) Establishing the Project Initiation Team.
- 2) Establishing a Relationship with the Customer.
- 3) Establishing the Project Initiation Plan.
- 4) Establishing Management Procedures.
- 5) Establishing the Project Management Environment and Project Workbook.
- 6) Developing the Project Charter.

1. *Establishing the project initiation team.* This activity involves organizing an initial core of project team members to assist in accomplishing the project initiation activities. For example, during the Purchasing Fulfillment System project at PVF, Chris Martin was assigned to support the Purchasing department. It is a PVF policy that all initiation teams consist of at least one user representative, in this case Juanita Lopez, and one member of the IS development group. Therefore, the project initiation team consisted of Chris and Juanita; Chris was the project manager. (Pine Valley Furniture Company (PVF) manufactures high-quality wood furniture and distributes it to retail stores throughout the United States. Its product lines include dinette sets, stereo cabinets, wall units, living room furniture, and bedroom furniture. PVF's product line had multiplied, sales volume had doubled, and staff had increased to 50 employees.)

2. *Establishing a relationship with the customer.* A thorough understanding of your customer builds stronger partnerships and higher levels of trust. At PVF, management has tried to foster strong working relationships between business units (like Purchasing) and the IS development group by assigning a specific individual to work as a liaison between both groups. Because Chris had been assigned to the Purchasing unit for some time, he was already aware of some of the problems with the existing purchasing systems. PVF's policy of assigning specific individuals to each business unit helped to ensure that both Chris and Juanita were comfortable working together prior to the initiation of the project. Many organizations use a similar mechanism for establishing relationships with customers.

3. *Establishing the project initiation plan.* This step defines the activities required to organize the initiation team while it is working to define the goals and scope of the project. Chris's role was to help Juanita translate her business requirements into a written request for an improved information system. This required the collection, analysis, organization, and transformation of a lot of information. Because Chris and Juanita were already familiar with each other and

their roles within a development project, they next needed to define when and how they would communicate, define deliverables and project steps, and set deadlines. Their initiation plan included agendas for several meetings. These steps eventually led to the creation of their SSR form.

4. *Establishing management procedures.* Successful projects require the development of effective management procedures. Within PVF, many of these management procedures had been established as standard operating procedures by the Systems Priority Board and the IS development group. For example, all project development work is charged back to the functional unit requesting the work. In other organizations, each project may have unique procedures tailored to its needs. Yet, in general, when establishing procedures, you are concerned with developing team communication and reporting procedures, job assignments and roles, project change procedures, and determining how project funding and billing will be handled. It was fortunate for Chris and Juanita that most of these procedures were already established at PVF, allowing them to move on to other project activities.

5. *Establishing the project management environment and project workbook.* The focus of this activity is to collect and organize the tools that you will use while managing the project and to construct the project workbook. Diagrams, charts, and system descriptions provide much of the project workbook contents. Thus, the project workbook serves as a repository for all project correspondence, inputs, outputs, deliverables, procedures, and standards established by the project team. The project workbook can be stored as an online electronic document or in a large three-ring binder. The project workbook is used by all team members and is useful for project audits, orientation of new team members, communication with management and customers, identifying future projects, and performing post-project reviews. The establishment and diligent recording of all project information in the workbook are two of the most important activities you will perform as project manager.

The project workbook for the Purchasing Fulfillment System consists of both a large hard-copy binder and electronic information where the system data dictionary, a catalog of data stored in the database, and diagrams are stored. For this system, all project documents can fit into a single binder. It is not unusual, though, for project documentation to be spread over several binders. As more information is captured and recorded electronically, however, fewer hard-copy binders may be needed. Many project teams keep their project workbooks on the Web. A Web site can be created so that all project members can easily access all project documents. This Web site can be a simple repository of documents or an elaborate site with password protection and security levels. The best feature of using the Web as your repository is that it enables project members and customers to review a project's status and all related information continually.

The project workbook for the Purchase Fulfillment System project contains nine key documents in both hard-copy and electronic form:

- 1) Project overview.
- 2) Initiation plan and SSR.

- 3) Project scope and risks.
- 4) Management procedures.
- 5) Data descriptions.
- 6) Process descriptions.
- 7) Team correspondence.
- 8) Project Charter.
- 9) Project schedule.

6. *Developing the project charter.* The project charter is a short, (typically one page) high-level document prepared for both internal and external stakeholders to formally announce the establishment of the project and to briefly describe its objectives, key assumptions, and stakeholders. The project charter ensures that both you and your customer gain a common understanding of the project. It is also a very useful communication tool; it helps to announce to the organization that a particular project has been chosen for development.

Project initiation is complete once these six activities have been performed. Before moving on to the next phase of the project, the work performed during project initiation is reviewed at a meeting attended by management, customers, and project team members. An outcome of this meeting is a decision to continue, modify, or abandon the project. In the case of the Purchasing Fulfillment System project at Pine Valley Furniture, the board accepted the SSR and selected a project steering committee to monitor project progress and to provide guidance to the team members during subsequent activities. If the scope of the project is modified, it may be necessary to return to project initiation activities and collect additional information. Once a decision is made to continue the project, a much more detailed project plan is developed during the project planning phase.

Unit 11

Memorize the words

make an assumption – сделать предположение, предположить что-л.

monitor – отслеживать, контролировать

scope – намерение, цель

feasibility – осуществимость, реализуемость

impact – влиять, воздействовать

document – документально подтверждать, документировать

SDLC System Development Life Cycle – жизненный цикл системы разработки

Gantt charts – график выполнения работ, график (диаграмма) Ганта (особый вид графиков для планирования сложных проектов)

target date – установленный срок

graphical depiction – графическое представление

assure – уверять, заверять кого-л., убеждать, гарантировать

stakeholder – участник совместного дела, участник проекта

steering committee – руководящий комитет
endorse – подтверждать, одобрять; поддерживать, рекомендовать

Text 11. Planning the Project

Do the following tasks:

- 1) Make up a list of new terms you can find in the text. Translate them into Russian.
- 2) Read the text. Translate it into Russian.
- 3) Make up a detailed plan of each part of the text:
 - a) divide the text into several parts;
 - b) give each part a heading. Retell each part of the text separately.

Planning the Project

The next step in the project management process is project planning. Research has found a positive relationship between effective project planning and positive project outcomes. Project planning involves defining clear, discrete activities and the work needed to complete each activity within a single project. It often requires you to make numerous assumptions about the availability of resources such as hardware, software, and personnel. It is much easier to plan nearer-term activities than those occurring in the future. In actual fact, you often have to construct longer-term plans that are more general in scope and nearer-term plans that are more detailed. The repetitive nature of the project management process requires that plans be constantly monitored throughout the project and periodically updated (usually after each phase) based upon the most recent information.

Project Planning

1. Describing Project Scope, Alternatives, and Feasibility.
2. Dividing the Project into Manageable Tasks.
3. Estimating Resources and Creating a Resource Plan.
4. Developing a Preliminary Schedule.
5. Developing a Communication Plan.
6. Determining Project Standards and Procedures.
7. Identifying and Assessing Risk.
8. Creating a Preliminary Budget.
9. Developing a Project Scope Statement.
10. Setting a Baseline Project Plan.

Also, the outcome of activities performed earlier in the project is likely to impact later activities. This means that it is very difficult, and very likely inefficient, to try to plan detailed solutions for activities that will occur far into the future.

As with the project initiation process, varied and numerous activities must be performed during project planning. For example, during the Purchasing Fulfillment System project, Chris and Juanita developed a 10-page plan. However, project plans

for very large systems may be several hundred pages in length. The types of activities that you can perform during project planning are described in the following list:

1. *Describing project scope, alternatives, and feasibility.* The purpose of this activity is to understand the content and complexity of the project. Within PVF's systems development methodology, one of the first meetings must focus on defining a project's scope. Although project scope information was not included in the SSR developed by Chris and Juanita, it was important that both shared the same vision for the project before moving too far along.

During this activity, you should reach agreement on the following questions:

- 1) What problem or opportunity does the project address?
- 2) What are the quantifiable results to be achieved?
- 3) What needs to be done?
- 4) How will success be measured?
- 5) How will we know when we are finished?

After defining the scope of the project, your next objective is to identify and document general alternative solutions for the current business problem or opportunity. You must then assess the feasibility of each alternative solution and choose which to consider during subsequent SDLC phases. In some instances, off-the-shelf software can be found. It is also important that any unique problems, constraints, and assumptions about the project be clearly stated.

2. *Dividing the project into manageable tasks.* This is a critical activity during the project planning process. Here, you must divide the entire project into manageable tasks and then logically order them to ensure a smooth evolution between tasks. The definition of tasks and their sequence is referred to as the work breakdown structure. Some tasks may be performed in parallel whereas others must follow one another sequentially. Task sequence depends on which tasks produce deliverables needed in other tasks, when critical resources are available, the constraints placed on the project by the client, and the process outlined in the SDLC.

For example, suppose that you are working on a new development project and need to collect system requirements by interviewing users of the new system and reviewing reports they currently use to do their job. A Gantt chart is a graphical representation of a project that shows each task as a horizontal bar whose length is proportional to its time for completion. Different colors, shades, or shapes can be used to highlight each kind of task. For example, those activities on the critical path (defined later) may be in red and a summary task could have a special bar. Planned versus actual times or progress for an activity can be compared by parallel bars of different colors, shades, or shapes. Gantt charts do not (typically) show how tasks must be ordered (precedence), but simply show when an activity should begin and end. Most project management software tools support a broad range of task durations, including minutes, hours, days, weeks, and months. As you will learn in later chapters, the SDLC consists of several phases that you will need to break down into activities. Creating a work breakdown structure requires that you decompose

phases into activities – summary tasks – and activities into specific tasks. The activity Interviewing consists of three tasks: design interview form, schedule appointments, and conduct interviews.

Defining tasks in too much detail will make the management of the project unnecessarily complex. You will develop the skill of discovering the optimal level of detail for representing tasks through experience. For example, it may be very difficult to list tasks that require less than one hour of time to complete in a final work breakdown structure. Alternatively, choosing tasks that are too large in scope (e.g., several weeks long) will not provide you with a clear sense of the status of the project or of the interdependencies between tasks. What are the characteristics of a “task”? A task:

- 1) Can be done by one person or a well-defined group.
- 2) Has a single and identifiable deliverable (The task is, however, the process of creating the deliverable).
- 3) Has a known method or technique.
- 4) Has well-accepted predecessor and successor steps.
- 5) Is measurable so that percent completed can be determined.

3. *Estimating resources and creating a resource plan.* The goal of this activity is to estimate resource requirements for each project activity and to use this information to create a project resource plan. The resource plan helps assemble and deploy resources in the most effective manner. For example, you would not want to bring additional programmers onto the project at a rate faster than you could prepare work for them. Project managers use a variety of tools to assist in making estimates of project size and costs. The most widely used method is called COCOMO (CONstructive COst MOdel), which uses parameters that were derived from prior projects of differing complexity. COCOMO uses these different parameters to predict human resource requirements for basic, intermediate, and very complex systems.

People are the most important, and expensive, part of project resource planning. Project time estimates for task completion and overall system quality are significantly influenced by the assignment of people to tasks. It is important to give people tasks that allow them to learn new skills. It is equally important to make sure that project members are not “in over their heads” or working on a task that is not well suited to their skills. Resource estimates may need to be revised based upon the skills of the actual person (or people) assigned to a particular activity.

One approach to assigning tasks is to assign a single task type (or only a few task types) to each worker for the duration of the project. For example, you could assign one worker to create all computer displays and another to create all system reports. Such specialization ensures that both workers become efficient at their own particular tasks. A worker may become bored if the task is too specialized or is long in duration, so you could assign workers to a wider variety of tasks. However, this approach may lead to lowered task efficiency. A middle ground would be to make assignments with a balance of both specialization and task variety. Assignments depend on the size of the development project and the skills of the project team.

Regardless of the manner in which you assign tasks, make sure that each team member works only on one task at a time. Exceptions to this rule can occur when a task occupies only a small portion of a team member's time (e.g., testing the programs developed by another team member) or during an emergency.

4. *Developing a preliminary schedule.* During this activity, you use the information on tasks and resource availability to assign time estimates to each activity in the work breakdown structure. These time estimates will enable you to create target starting and ending dates for the project. Target dates can be revisited and modified until a schedule is produced that is acceptable to the customer. Determining an acceptable schedule may require that you find additional or different resources or that the scope of the project be changed. The schedule may be represented as a Gantt chart, or as a network diagram. A network diagram is a graphical depiction of project tasks and their interrelationships. As with a Gantt chart, each type of task can be highlighted by different features on the network diagram. The distinguishing feature of a network diagram is that the ordering of tasks is shown by connecting tasks – depicted as rectangles or ovals – with their predecessor and successor tasks. However, the relative size of a node (representing a task) or a gap between nodes does not imply the task's duration.

5. *Developing a communication plan.* The goal of this activity is to outline the communication procedures among management, project team members, and the customer. The communication plan includes when and how written and oral reports will be provided by the team, how team members will coordinate work, what messages will be sent to announce the project to interested parties, and what kinds of information will be shared with vendors and external contractors involved with the project. It is important that free and open communication occur among all parties with respect to proprietary information and confidentiality with the customer. When developing a communication plan, numerous questions must be answered in order to assure that the plan is comprehensive and complete, including:

- 1) Who are the stakeholders for this project?
- 2) What information does each stakeholder need?
- 3) When, and at what interval, does this information need to be produced?
- 4) What sources will be used to gather and generate this information?
- 5) Who will collect, store, and verify the accuracy of this information?
- 6) Who will organize and package this information into a document?
- 7) Who will be the contact person for each stakeholder should any questions arise?
- 8) What format will be used to package this information?
- 9) What communication medium will be most effective for delivering this information to the stakeholder?

Once these questions are answered for each stakeholder, a comprehensive communication plan can be developed. In this plan, a summary of communication documents, work assignments, schedules, and distribution methods will be outlined. Additionally, a project communication matrix can be developed which provides a summary of the overall communication plan (see Figure 3-13). This matrix can be

easily shared among team members, and verified by stakeholders outside the project team, so that the right people are getting the right information at the right time, and in the right format.

Figure 3-13 – The Project Communication Matrix provides a high-level summary of the communication plan

<i>Stakeholder</i>	<i>Document</i>	<i>Format</i>	<i>Team Contact</i>	<i>Date Due</i>
Team Members	Project Status Report	Project Intranet	Juan Kim	First Monday of Month
Management Supervisor	Project Status Report	Hard Copy	Juan Kim	First Monday of Month
User Group	Project Status Report	Hard Copy	James Kim	First Monday of Month
Internal IT Staff	Project Status Report	Email	Jackie James	First Monday of Month
It Manager	Project Status Report	Hard Copy	Juan Jeremy	First Monday of Month
Contract Programmers	Software Specifications	E-mail/Project Intranet	Jordan Kim	October 1, 2013
Training Subcontractor	Implementati on and Training Plan	Hard Copy	Jordan James	January 7, 2014

6. *Determining project standards and procedures.* During this activity, you will specify how various deliverables are produced and tested by you and your project team. For example, the team must decide on which tools to use, how the standard SDLC might be modified, which SDLC methods will be used, documentation styles (e.g., type fonts and margins for user manuals), how team members will report the status of their assigned activities, and terminology. Setting project standards and procedures for work acceptance is a way to ensure the development of a high-quality system. Also, it is much easier to train new team members when clear standards are in place. Organizational standards for project management and conduct make the determination of individual project standards easier and the interchange or sharing of personnel among different projects feasible.

7. *Identifying and assessing risk.* The goal of this activity is to identify sources of project risk and to estimate the consequences of those risks. Risks might arise from the use of new technology, prospective users’ resistance to change, availability of critical resources, competitive reactions or changes in regulatory actions due to the construction of a system, or team member inexperience with technology or the business area. You should continually try to identify and assess project risk.

The identification of project risks is required to develop PVF's new Purchasing Fulfillment System. Chris and Juanita met to identify and describe possible negative outcomes of the project and their probabilities of occurrence. Although we list the identification of risks and the outline of project scope as two discrete activities, they are highly related and often concurrently discussed.

8. *Creating a preliminary budget.* During this phase, you need to create a preliminary budget that outlines the planned expenses and revenues associated with your project. The project justification will demonstrate that the benefits are worth these costs. This analysis shows net present value calculations of the project's benefits and costs as well as a return on investment and cash flow analysis.

9. *Developing a Project Scope Statement.* An important activity that occurs near the end of the project planning phase is the development of the Project Scope Statement. Developed primarily for the customer, this document outlines work that will be done and clearly describes what the project will deliver. The Project Scope Statement is useful to make sure that you, the customer, and other project team members have a clear understanding of the intended project size, duration, and outcomes.

10. *Setting a Baseline Project Plan.* Once all of the prior project planning activities have been completed, you will be able to develop a Baseline Project Plan. This baseline plan provides an estimate of the project's tasks and resource requirements and is used to guide the next project phase – execution. As new information is acquired during project execution, the baseline plan will continue to be updated.

At the end of the project planning phase, a review of the Baseline Project Plan is conducted to double-check all information in the plan. As with the project initiation phase, it may be necessary to modify the plan, which means returning to prior project planning activities before proceeding. As with the Purchasing Fulfillment System project, you may submit the plan and make a brief presentation to the project steering committee at this time. The committee can endorse the plan, ask for modifications, or determine that it is not wise to continue the project as currently outlined.

Unit 12

Memorize the words

execution – осуществление, выполнение, исполнение

acquire – обзаводиться, приобретать

formidable task – трудная задача, трудноразрешимая задача

ramification – разветвление, ветвление, последствия

approve – одобрять, утверждать, санкционировать

bungle – плохо сделанная работа

resignation – уход с должности, отставка

head off – препятствовать, предотвращать (что-л.)

ad hoc – специальный, подходящий к данному случаю

outline – обрисовать, наметить в общих чертах

Text 12. Executing the Project

Do the following tasks:

- 1) Make up 10 questions about the text and let your neighbour answer them, then change parts.
- 2) Find in the text following abbreviations and give their full version: SDLC, BPP, PVF, PFS.

Executing the Project

Project execution puts the Baseline Project Plan into action. Within the context of the SDLC, project execution occurs primarily during the analysis, design, and implementation phases. During the development of the Purchasing Fulfillment System, Chris Martin was responsible for five key activities during project execution. These activities are described in five project execution activities:

- 1) Executing the Baseline Project Plan.
- 2) Monitoring Project Progress against the Baseline Project Plan.
- 3) Managing Changes to the Baseline Project Plan.
- 4) Maintaining the Project Workbook.
- 5) Communicating the Project Status.

1. *Executing the Baseline Project Plan.* As project manager, you oversee the execution of the baseline plan. This means that you initiate the execution of project activities, acquire and assign resources, orient and train new team members, keep the project on schedule, and ensure the quality of project deliverables. This is a formidable task, but a task made much easier through the use of sound project management techniques. For example, as tasks are completed during a project, they can be “marked” as completed on the project schedule. Members of the project team will come and go. You are responsible for initiating new team members by providing them with the resources they need and helping them assimilate into the team. You may want to plan social events, regular team project status meetings, team-level reviews of project deliverables, and other group events to mold the group into an effective team.

2. *Monitoring project progress against the Baseline Project Plan.* While you execute the Baseline Project Plan, you should monitor your progress. If the project gets ahead of (or behind) schedule, you may have to adjust resources, activities, and budgets. Monitoring project activities can result in modifications to the current plan. Measuring the time and effort expended on each activity will help you improve the accuracy of estimations for future projects. It is possible, with project schedule charts such as Gantt charts, to show progress against a plan, and it is easy with network diagrams to understand the ramifications of delays in an activity. Monitoring progress also means that the team leader must evaluate and appraise

each team member, occasionally change work assignments or request changes in personnel, and provide feedback to the employee's supervisor.

3. *Managing changes to the Baseline Project Plan.* You will encounter pressure to make changes to the baseline plan. At PVF, policies dictate that only approved changes to the project specification can be made and all changes must be reflected in the baseline plan and project workbook, including all charts. For example, if Juanita suggests a significant change to the existing design of the Purchasing Fulfillment System, a formal change request must be approved by the steering committee. The request should explain why changes are desired and describe all possible impacts on prior and subsequent activities, project resources, and the overall project schedule. Chris would have to help Juanita develop such a request. This information allows the project steering committee to more easily evaluate the costs and benefits of a significant midcourse change.

In addition to changes occurring through formal request, changes may also occur from events outside your control. In fact, numerous events may initiate a change to the Baseline Project Plan, including the following possibilities:

- 1) A slipped completion date for an activity.
- 2) A bungled activity that must be redone.
- 3) The identification of a new activity that becomes evident later in the project.
- 4) An unforeseen change in personnel due to sickness, resignation, or termination.

When an event occurs that delays the completion of an activity, you typically have two choices: devise a way to get back on schedule or revise the plan. Devising a way to get back on schedule is the preferred approach because no changes to the plan will have to be made. The ability to head off and smoothly work around problems is a critical skill that you need to master.

As you will see later in this chapter, project schedule charts are very helpful in assessing the impact of change. Using such charts, you can quickly see if the completion time of other activities will be affected by changes in the duration of a given activity or if the whole project completion date will change. Often you will have to find a way to rearrange the activities because the ultimate project completion date may be rather fixed. There may be a penalty to the organization (even legal action) if the expected completion date is not met.

4. *Maintaining the project workbook.* As in all project phases, maintaining complete records of all project events is necessary. The workbook provides the documentation new team members require to assimilate project tasks quickly. It explains why design decisions were made and is a primary source of information for producing all project reports.

5. *Communicating the project status.* The project manager is responsible for keeping all stakeholders – system developers, managers, and customers – abreast of the project status. In other words, communicating the project status focuses on the execution of the project communication plan and the response to any ad hoc information requests by stakeholders. There are a broad variety of methods that can

be used to distribute information, each with strengths and weakness. Some methods are easier for the information sender, but more difficult or less convenient for the receiver. With the maturing of digital networks and the Internet, more and more digital communication is being exchanged. Procedures for communicating project activities vary from formal meetings to informal hallway discussions. Some procedures are useful for informing others of the project's status, others are better for resolving issues, and still others are better for keeping permanent records of information and events. Two types of information are routinely exchanged throughout the project: *work results* – the outcomes of the various tasks and activities that are performed to complete the project – and *the project plan* – the formal comprehensive document that is used to execute the project; it contains numerous items including the project charter, project schedule, budgets, risk plan, and so on.

This section outlined your role as the project manager during the execution of the Baseline Project Plan. The ease with which the project can be managed is significantly influenced by the quality of prior project phases. If you develop a high-quality project plan, it is much more likely that the project will be successfully executed. The next section describes your role during project closedown, the final phase of the project management process.

Unit 13

Memorize the words

termination – завершение, прекращение

to meet requirements – удовлетворять техническим требованиям

assumption – допущение, предположение, самоочевидное определение

appraisal – оценка, определение ценности

memorabilia – памятные вещи, реликвии, сувениры

obligation – долговое обязательство, обязанность

Text 13. Closing Down the Project

Do the following tasks:

- 1) Read and translate the text.
- 2) Make up questions to each paragraph of the text and let your neighbour answer them, then change parts.

Closing Down the Project

The focus of project closedown is to bring the project to an end. Projects can conclude with a natural or unnatural termination. A natural termination occurs when the requirements of the project have been met – the project has been completed and is a success. An unnatural termination occurs when the project is stopped before completion. Several events can cause an unnatural termination of a project. For

example, it may be learned that the assumption used to guide the project proved to be false, that the performance of the systems or development group was somehow inadequate, or that the requirements are no longer relevant or valid in the customer's business environment. The most likely reasons for the unnatural termination of a project relate to running out of time or money, or both. Regardless of the project termination outcome, several activities must be performed: closing down the project, conducting post-project reviews, and closing the customer contract. Within the context of the SDLC, project closedown occurs after the implementation phase. The system maintenance phase typically represents an ongoing series of projects, each of which must be individually managed.

There are three project closedown activities:

- 1) Closing Down the Project.
- 2) Conducting Post-project Reviews.
- 3) Closing the Customer Contract.

1. *Closing down the project.* During closedown, you perform several diverse activities. For example, if you have several team members working with you, project completion may signify job and assignment changes for some members. You will likely be required to assess each team member and provide an appraisal for personnel files and salary determination. You may also want to provide career advice to team members, write letters to superiors praising special accomplishments of team members, and send thank-you letters to those who helped but were not team members. As project manager, you must be prepared to handle possible negative personnel issues such as job termination, especially if the project was not successful. When closing down the project, it is also important to notify all interested parties that the project has been completed and to finalize all project documentation and financial records so that a final review of the project can be conducted. You should also celebrate the accomplishments of the team. Some teams will hold a party, and each team member may receive memorabilia (e.g., a T-shirt with "I survived the X project"). The goal is to celebrate the team's effort to bring a difficult task to a successful conclusion.

2. *Conducting post-project reviews.* Once you have closed down the project, final reviews of the project should be conducted with management and customers. The objective of these reviews is to determine the strengths and weaknesses of project deliverables, the processes used to create them, and the project management process. It is important that everyone understands what went right and what went wrong in order to improve the process for the next project. Remember, the systems development methodology adopted by an organization is a living guideline that must undergo continual improvement.

3. *Closing the customer contract.* The focus of this final activity is to ensure that all contractual terms of the project have been met. A project governed by a contractual agreement is typically not completed until agreed to by both parties, often in writing. Thus, it is imperative that you gain agreement from your customer

that all contractual obligations have been met and that further work is either their responsibility or covered under another SSR or contract.

Closedown is a very important activity. A project is not complete until it is closed, and it is at closedown that projects are deemed a success or failure. Completion also signifies the chance to begin a new project and to apply what you have learned. Now that you have an understanding of the project management process, the next section describes specific techniques used in systems development for representing and scheduling activities and resources.

Unit 14

Memorize the words

depict – изображать на картине, описывать

predecessor – предшествующий элемент, предшественник, предок

successor – наследник, последователь, последующий элемент

overlap time – время перекрытия

slack time – время простоя, период неполной загрузки

Text 14. Representing and Scheduling Project Plans

Do the following tasks:

- 1) Give the written translation of the text.
- 2) Retell the text.

Representing and Scheduling Project Plans

A project manager has a wide variety of techniques available for depicting and documenting project plans. These planning documents can take the form of graphical or textual reports, although graphical reports have become most popular for depicting project plans. The most commonly used methods are Gantt charts and network diagrams. Because Gantt charts do not (typically) show how tasks must be ordered (precedence) but simply show when a task should begin and when it should end, they are often more useful for depicting relatively simple projects or subparts of a larger project, showing the activities of a single worker, or monitoring the progress of activities compared to scheduled completion dates (Figure 3-18). Recall that a network diagram shows the ordering of activities by connecting a task to its predecessor and successor tasks. Sometimes a network diagram is preferable; other times a Gantt chart more easily shows certain aspects of a project. Here are the key differences between these two charts.

1. Gantt charts visually show the duration of tasks whereas a network diagram visually shows the sequence dependencies between tasks.

2. Gantt charts visually show the time overlap of tasks whereas a network diagram does not show time overlap but does show which tasks could be done in parallel.

3. Some forms of Gantt charts can visually show slack time available within an earliest start and latest finish duration. A network diagram shows this by data within activity rectangles.

Project managers also use textual reports that depict resource utilization by task, complexity of the project, and cost distributions to control activities. Most project managers use computer-based systems to help develop their graphical and textual reports. Later in this chapter, we discuss these automated systems in more detail.

A project manager will periodically review the status of all ongoing project task activities to assess whether the activities will be completed early, on time, or late. Once changed, the scheduled start and finish times of all subsequent tasks will also change. Making such a change will also alter a Gantt chart or network diagram used to represent the project tasks. The ability to easily make changes to a project is a very powerful feature of most project management environments. It enables the project manager to determine easily how changes in task duration impact the project completion date. It is also useful for examining the impact of “what if” scenarios of adding or reducing resources, such as personnel, for an activity.

Unit 15

Memorize the words

project schedule – план выполнения проекта

network diagram – сетевой графи

refer – отсылать, направлять, обращаться

Text 15. Representing Project Plans

Do the following tasks:

1) Make up a list of new terms you can find in the text. Translate them into Russian.

2) Give a written translation of the text into Russian.

Representing Project Plans

Project scheduling and management require that time, costs, and resources be controlled. Resources are any person, group of people, piece of equipment, or material used in accomplishing an activity. Network diagramming is a critical path scheduling technique used for controlling resources. A critical path refers to a sequence of task activities whose order and durations directly affect the completion date of a project. A network diagram is one of the most widely used and best-known scheduling methods. You would use a network diagram when tasks:

- 1) Are well defined and have a clear beginning and end point.
- 2) Can be worked on independently of other tasks.
- 3) Are ordered.

4) Serve the purpose of the project.

A major strength of network diagramming is its ability to represent how completion times vary for activities. Because of this, it is more often used than Gantt charts to manage projects such as information systems development, where variability in the duration of activities is the norm. Network diagrams are composed of circles or rectangles representing activities and connecting arrows showing required work flows.

Unit 16

Memorize the words

run the business – вести дела

set of interlocking networks – ряд взаимосвязанных сетей

oil rig – гидроаппаратура, установка для бурения нефтяных скважин

refiner – специалист по нефтепереработке, рафинировочные вальцы, рафинёр

wharf – пристань, причал, верфь

impetus – стремительность, стимул, толчок

challenge – вызов (бросать вызов), серьезное испытание

vulnerable – уязвимый, ранимый

secure communications – связь по защищенным сетям, конфиденциальная связь, секретная связь

virtual private network – виртуальная частная сеть (удаленная локальная сеть, для доступа к которой через интернет используется протокол PPTP)

Text 16. Communications technologies and distributed systems

Do the following tasks:

1) Give the Russian variant of the following expressions: modern information systems, set of interlocking networks, secure communications, virtual private network.

2) Give a written translation of the text into Russian.

3) Retell the text.

Communications technologies and distributed systems

Modern information systems rely on the technology of communications as much as on the traditional technology of computers and data handling. It is common for the information systems of organizations to need multiple elements in many geographical locations – distributed systems. For example, an oil company with sites on five continents would expect to be able to share information and build common systems to help run the business. This would all be based on a set of interlocking networks in buildings, on oil rigs, in refineries and across oceans. The benefits of being able to develop such systems might be more efficient operations,

more sharing of information and the use of standard procedures. The use of a distributed approach extends beyond one organization, and networks become a part of the way organizations do business with each other. For example, through a B2B e-commerce application an oil company might take orders for chemicals from its main customers or reserve wharf space for its tankers in various ports.

The internet – the network of networks that we all have access to and through which we can all share information – has provided an even stronger impetus for using communications in information systems. (For information on the history of the internet try www.internetsociety.org/internet/what-internet/history-internet/) Today this communications medium – ‘the net’ – is seen by many as both the principal new challenge and the most exciting opportunity for building and using information systems. In the case above, the oil company may well use the internet as the basis for their distributed business systems, but they will almost certainly be concerned that the internet is too open and vulnerable to serve as a basis for their business. One means to provide secure communications across the internet is to use the technology of virtual private networks (VPN).

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