МИНИСТЕРСТВО ОБРАЗОВАНИЯ И НАУКИ РОССИЙСКОЙ ФЕДЕРАЦИИ

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В задачи пособия входит обучение студентов работе с языковыми материалами на английском языке в рамках их будущей специальности, а также развитие навыков устной и письменной речи. В силу специфики данного направления подготовки внимание уделяется как деловому английскому языку, так и особенностям английского для специалистов в области информационных технологий.

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CONTENTS

CHAPTER I. WHAT IS BUSINESS INFORMATICS

UNIT 1. The future of IT-related academic disciplines

1 Reading activities

1.1 Do you agree with the forecast given in the title of the text? Why or why not?

Read the text and match the paragraph headings to the paragraphs:

A. Ability to combine business and IT knowledge.
B. Decrease of interest for IT-related courses.
C. No clear idea of what "Information System" is.
D. A need to change programs of education.
E. Debate over the content of education programs.
F. The need to offer attractive courses.

1.2 Which paragraph tells us about:

A. worries about the loss of technical jobs?
B. a need for applied computer skills?
C. a capability to solve any kind of IT problem?
D. importance of IT design knowledge?
E. an ability to control large groups of people from different countries?
F. possible content of education programs?

1.3 Put the sentences, summarizing the main idea of each paragraph, in the correct order:

A. The necessity to develop both IT and business skills makes universities offer combined courses to attract more students.
B. Specialists are worried that there will be a decrease in the number of IT-related courses.
C. There is still disagreement about the content of Information Systems educational programs.
D. IT graduates are expected to solve any problem.
E. Educational programs need to be changed in the direction of business-oriented IT.
F.IT graduates should know how to apply their knowledge in business.

1.4 Answer the questions on the text in your own words:

A. What controversy is mentioned in the first paragraph?
B. What should be done to increase the number of IT students?
C. What subjects are expected to be in high demand in the near future?
D. What are the key elements of Information Systems?
E. What skills should universities develop?
F. What is happening to traditional computing degree programs?
G. What kind of discussions are going on among university professors?
H. What subjects are mentioned as components of IS curriculum?
I. How can we characterize the identity of IS as a university discipline?

1.5 Summarize the main ideas of the text in your own words, using task IV as a plan.

Demand for IT Graduates Will Grow

1. Over the last few decades, universities have offered various courses in management, information technology, computer science, software engineering and more recently information systems, information management, and business informatics. Several of these courses have been established at most universities, and in particular the growth of information technology (IT) and information systems (IS) - related programs are expected to continue. However, recently there are concerns that the number of students registered for information systems-related courses could stagnate or fall. In the United Kingdom (UK) the numbers of students studying information systems dropped from 41,440 students in 2004/05 to 35,765 students in 2005/06, creating significant problems for many information systems departments. While, at the same time, a more applied and professionally orientated computing and information systems education is required and demanded.

2. As the figures illustrate, the rapid changes in recent years require constant evaluation and modification of education programs in order to make them attractive and suitable for students. Indeed, claims that Information Technology (IT) is no longer a source of strategic advantage, have generated a growing concern over the loss of technology-orientated jobs. It will increase the emphasis on ‘business-orientated’ Information Technology jobs.

3. Generally, it is expected that demand for subjects such as application design and integration, enterprise architecture, information management, and business process management will increase. The demand for graduates capable of coordinating complex information and supply chain networks and project managers managing global IT projects is also expected to rise. Students may also need to understand how to manage project teams, especially geographically and ethnically diverse teams. On the other hand, innovations in information and software technology should also be considered as key elements of information systems.

4. Universities are expected to provide a broad business and real world perspective, strong analytical and critical thinking skills, and interpersonal communication and team skills as well as core knowledge of information systems. These skills should be combined with a solid methodological foundation in design and implementation of information technology solutions that enhance organizational performance. Faculties in universities are increasingly under pressure and are expected to offer attractive and profitable study programs. Schools with traditional computing degree programs are developing variations in many of their IT programs. Business schools are offering various types of management information systems courses and courses with a computing element.

5. Although attempts have been made to develop frameworks for information systems and to provide references for curricula, study programs are diverse. Among faculty, there is often discussion about the direction of IS programs. Different programs aim to emphasize selected aspects of information systems. Discussions among information systems faculty about the core elements and subjects of information systems degrees emerge frequently. In some discussions it seems that the information systems curriculum should include many (if not all) related subjects ranging from business and information system strategy to management and marketing, organizational concepts, modeling and information systems architecture, programming, mathematics, statistics and operations research as well as computing, networking and Information and Communication Technologies (ICT). In addition, the complaints often reported on a regular basis from practitioners are that university educators do not prepare their students adequately for the demands of the real professional career-focused world.

6. In summary, it seems that information systems graduates are expected to be the ‘all-in-one person solution suitable for every information systems-related problem’. This seems to be symptomatic for the infor-

mation systems field. Similarly, a clear identity of the information systems discipline is still absent. Consequently many universities struggle with the proper direction and design of an information systems-related curriculum.

2 Vocabulary activities

2.1 Study the wordlist using a dictionary if necessary and find the words, related to business and to education:

(to) offer, a course, concern, (to) stagnate, (to) apply, (to) require, evaluation, emphasis, (to) be capable of, a supply chain, (to) manage a team, (to) provide, critical thinking, implementation, a solution, (to) enhance, a degree program, (to) develop variations, an attempt, a curriculum, faculty, (to) range, a core element, (to) emerge, a field, a direction.

2.2 Try to make all possible collocations with the words from 2.1, for example: (to) offer a course…

2.3 Use these groups of words to make sentences. Change the forms of the words where necessary:

A. (to) offer, courses, university, different, our, IT-related.
B. concern, faculty, (to) express, curriculum, for, about, business-related, disciplines.
C. (to) develop, the degree program, critical thinking, (to) manage a team, required.
D. implementation, this solution, (to) provide, of, the, the supply chain, a core element, with.
E.(to) stagnate, the situation, (to) develop variations, without.
F .solutions, they, which, (to) range, (to) implement, from, traditional, unusual, to.
G. the attempt, (to) enhance, the course, of, the core element.
H. the opportunity, (to) emerge, (to) provide, a direction, new, the field, in.

2.4 Finish the sentences:

A. The faculty showed concern about…
B. The economy stagnated because…
C. His critical thinking skills allowed him to …
D. He had to manage a team, whose members ranged …
E. The implementation of this solution requires …

F. One of possible directions in this field …
G. To develop this degree program we applied …
H. The evaluation of the supply chain provided …
I. Special emphasis should be given …
J. The courses offered by the university enhance …

3 Speaking activities

3.1 Make up 10 questions you would ask the faculty of BI department of an American university, using the words from Vocabulary Activity I.

UNIT 2. The place of Business Informatics among other disciplines

1 Reading activities

1.1 How can you describe Business Informatics as a university subject?

1.2 Read the text and match the paragraph headings below to the paragraphs:

A. Discussions about Business Informatics in European universities.
B. Business Informatics as an interdisciplinary subject.
C. Information Systems as a part of business knowledge.
D. Business Informatics and Business Study complement each other.
E. Difference between BI and Information Systems.

1.3 Which paragraph tells us about:

A. why Information Systems and Business Informatics are still different disciplines?
B. the nature of Information Systems as a discipline?
C. Informatics providing support for business functions?
D. Different approaches to teaching Information Systems in different countries?
E. what kind of science BI is?

1.4 Put the sentences, summarizing the main idea of each paragraph, in the correct order:

A. Information Systems is located inside business knowledge.
B. BI includes business, scientific and engineering components.
C. Unlike Information Systems, BI considers not only machines but humans.
D. Universities discuss key subjects, teaching methods and directions of research in BI.
E.BI helps business using IT methods.

1.5 Marks the following statements as True (T) or False (F):

A. IS as a discipline is located in public administration.
B. IS has among its components technology.
C. BI is not popular among European universities.
D. The discussion among specialists is focused on the price of tuition.
E. The 16th European Conference on IS considered aspects of business management.
F. BI is a subject separate from IS.
G. BI supports informatics by applying business principles.
H. BI is both theoretical and practical discipline.

1.6 Summarize the main ideas of the text using Activity IV as a plan.

Business Informatics and Information Systems

1. Simultaneously with the discussion on key capabilities of IS graduates, there is an ongoing debate regarding the nature and identity of information systems as a discipline. Most of the debate is focused on whether information systems is informed by the business discipline or if it can be rooted in other domains, like healthcare or public administration. Indeed the current model curricula for IS undergraduate studies has clearly identified business as the domain in which IS is located. Although ongoing curricula revision extends this view and recognizes that information systems is a discipline that integrates technology and organizational processes with domain expertise, domain knowledge and business knowledge is still seen as fundamental to the information systems discipline.

2. Almost isolated from the broader discussion among the international IS community, a growing number of universities in continental Europe, foremost in German-speaking countries, offer and discuss study

programs in business informatics. In 2006 a panel at the 14th European Conference on Information Systems (ECIS 06) discussed grand challenges in common across Europe concerning education and research in business informatics. The discussion was focused on the importance of core subjects, teaching mode, and research topics within the discipline from a management, information systems, and informatics perspective. The discussion showed that education in information systems is very diverse, with different streams in information systems; on the one hand, a technology-, engineering- and method-orientated perspective and on the other hand, a business- and management-orientated focus. At the 16th European Conference on Information Systems (ECIS 08) a meeting with academics from various countries was held discussing aspects of business informatics. The discussion emphasized the engineering characteristics of business informatics in contrast to the managerial oriented stream of information systems.

3. Within the business informatics community, broad agreement exists that business informatics shows numerous similarities to the discipline of information systems; however, there are some particular characteristics that make business informatics a discipline in its own right. First emerging in the 1970s as a technology-oriented course in business, over the last decade it became an accepted field of research and study. As a stream of information systems, business informatics focuses on business information systems as socio-technical systems comprising both machines and humans.

4. However, business informatics combines and complements explicitly the domains of informatics and business studies. Informatics is primarily concerned with the technology of information and communication systems, while business studies focuses on management functions. Business informatics aims to support business functions by applying informatics principles and technologies.

5. Business informatics is concerned with the concept, development, implementation, maintenance and utilization of business information systems. Business informatics also includes the management of information systems while it emphasizes the relationship between humans, business functions, information and communication systems, and technology. Defined as a science discipline, business informatics is generally categorized as:

• *applied science* that studies real world phenomena;

• *formal science* that creates and applies formal description methods and models;

• *engineering discipline* that systematically designs and constructs information and communication systems. Therefore business informatics is an interdisciplinary subject .It can be summarized as a socio-technological and business-oriented subject with *engineering* penetration.

2 Vocabulary activities

2.1 Study the wordlist using a dictionary if necessary and find the words, related to education and research:

A capability, regarding, (to) be rooted in, an undergraduate, a domain, a community, a challenge, core subjects, research topics, diverse, a perspective, (to) hold a conference, (to) emphasize, a similarity, particular, (to) accept, (to) comprise, (to) complement, maintenance, (to) define, penetration.

2.2 Try to make all possible collocations with the words, for example: (to) emphasize a challenge

2.3 Match the words with their definitions or synonyms:

1) community	a) keeping something in order
2) maintenance	b) a difficult task
3) penetration	c) (to) stress
4) (to) emphasize	d) a field or branch
5) (to) complement	e) (to) add
6) an undergraduate	f) getting inside something
7) a domain	g) a group of people united by something
8) a challenge	h) a student
9) a capability	i) various or different
10) diverse	j) (to) agree or acknowledge
11) (to) accept	k) an ability or talent
12) (to) comprise	l) concrete
13) particular	m) (to) make up or include

2.4 Paraphrase the sentences using the words from Activity I:

A. Some students would like to get a Master's degree.

B. Getting a degree in IT for some students is a difficult task.

C. Getting into the American software market for a Russian company is a difficult task.
D. In this field we all have to agree that he is an authority.
E. You need to add more features to your product.
F. The English-speaking part of the city welcomed his arrival.
G. He is a specialist in many different fields.
H. She made up a list of all the things she needed.
I. In this concrete situation we can't do anything.
J. His job is to keep the equipment in order.
K. His different talents made him a leader.

3 Writing activities

3.1 Study your educational program on the site of the university and write a short report (250 words maximum) describing engineering, business and IT subjects in the curriculum.

UNIT 3. Careers for BI graduates

1 Reading activities

1.1 How do you imagine your future job and career after graduating from the university?

1.2 Read the text and match the paragraph headings below to the paragraphs:

A. Using best practices.
B. An exciting and dynamic career.
C. Basic rules of IS management.
D. What IS students study at the university.
E. Why IS job is so demanding.
F. Why IS specialists work in teams.

1.3 Which paragraph tells us about:

A. stages in the work of IS specialists?
B. IS specialists' job satisfaction?
C. preparation of IS specialists?
D. the role of programming in IS management?

E. specialization of IS professionals?
F. special systems which monitor customers?

1.4 Put the sentences, summarizing the main idea of each paragraph, in the correct order:

A.IS specialists usually work in teams.
B.IS job is very important and includes a lot of functions.
C.IS job is interesting and involves a lot of changes.
D.IS job involves using best practices adopted by their companies.
E.IS job involves working not only with systems and processes, but also with people.
F.IS students are taught how to solve business problems using IS.

1.5 Answer the questions on the text in your own words:

A. Why are most IS specialists happy with their job?
B. What do IS students focus on during their studies?
C. How does the use of best practices help IS professionals?
D. Why do IS specialists usually work in teams?
E. Why do IS professionals study business data?
F. What functional areas of business are mentioned in the last paragraph?

1.6 Summarize the main ideas of the text using Activity IV as a plan.

What Does an IS Career Look Like?

1. A career in information systems is full of action, problem-solving, and teamwork. It is the goal of information systems professionals to bridge the knowledge gap between business users and technologists, and thus IS professionals must be fluent in both worlds. Work in the field of information systems is exciting, fun, and fast-paced. There is always a new team to work with and new technology to learn about, and projects move quickly leaving openings for new endeavors. In a recent report published in The Wall Street Journal, information systems professionals were tied for the highest percentage of college graduates that were satisfied with their career path.

2. When preparing to become an IS professional, students focus on learning about the types of systems that exist, what they offer to businesses, best practices for implementation, and the advantages and disad-

vantages of each. Students also focus on how to work with business users and discover what their system needs are and how they can best be served by information systems. Information systems professionals focus on solving problems in businesses through the use of information systems.

3. When students start their careers, they frequently work in teams that connect businesspersons with the appropriate system solution for their situation. Usually the organizations they work for adopt a set of best practices to create consistency across project teams. Through the use of these best practices, IS professionals determine what options are available, consider the pros and cons of each, design a customized solution to match the specific business, and develop a plan on how to best implement the information system, including rollout phases and training.

4. As mentioned, IS professionals typically work in teams. This is because the projects are usually very large and have many interworking pieces. As a result, IS professionals specialize in a particular type of work and contribute their expertise in this area. Specializations include system analysts, software developers, database administrators, and project managers.

5. Information systems as a career is attractive to many individuals because of the traits above. However, it is also engaging because it is a career in which you get to work on making people's lives easier. IS professionals focus on developing systems that businesspersons will use to create efficiency and increase their performance. IS professionals design systems that help businesspersons make better decisions (decision support systems) and lead organizations (executive dashboards). Systems are also created to keep track of materials (supply chain management systems) and customers (customer relationship management systems). And given the important role of information in modern organizations, IS professionals record, monitor, and analyze data to learn how the business can improve (business intelligence systems). IS professionals work to design these systems to be more usable, more efficient, and more informative.

6. The information systems triangle includes people, processes, and information technology. It is a good reminder that MIS is about much more than just technology.

- Well designed information systems keep the user in mind at each step of the process.

- Information systems are used by every functional area of business–marketing, management, finance, and accounting. For this reason it is good to have a strong background in information systems.
- Careers in information systems tend to be dynamic, team based, and focused on problem solving.
- Few information systems careers involve programming. However, IS professionals must be able to communicate with programmers.

2 Vocabulary activities

2.1 Study the wordlist using a dictionary if necessary and divide them into groups, denoting IT job titles (1) and IT-related (2) and business-related (3) functions and phenomena:

Problem-solving, (to) bridge the gap, (to) be fluent in smth., an opening for endeavors, (to) publish a report, a career path, (to) focus on smth., (to) serve the needs of smth., appropriate, consistency, rollout, contribute one's expertise, a system analyst, a software developer, a database administrator, a project manager, a trait, engaging, (to) create efficiency, (to) increase performance, (to) make a decision, (to) keep track of smth., a supply chain, a customer relationship, (to) record data, (to) improve, a reminder, (to) keep smth in mind, accounting, a background, (to) tend.

2.2 Match the words with their definitions:

1) problem-solving	a) (to) have a tendency, (to) be prone to
2) (to) bridge the gap	b) uniformity
3) (to) be fluent in something	c) suitable
4) an opening for endeavors	d) all the jobs that somebody has had
5) (to) publish a report	e) (to) concentrate on smth
6) a career path	f) a specialist in creating computer programs
7) (to) focus on something	g) (to) fulfill somebody's requirements
8) (to) serve the needs of something	h) beginning or launching something
9) appropriate	i) a specialist managing a data base

10) consistency	j) (to) share one's professional knowledge
11) rollout	k) (to) type a big analytical document
12) contribute one's expertise	l) (to) fill in some missing element
13) a system analyst	m) (to) be able to do something fast
14) a software developer	n) a specialist in analyzing IT system problems
15) a database administrator.	o) something helping you not to forget
16) a project manager	p) (to) write down the information
17) a trait	q) (to) remember
18) engaging	r) (to) make or become better
19) (to) create efficiency	s) an area focusing on financial matters
20) (to) increase performance	t) (to) decide to do something
21) (to) make a decision	u) a line from the point of origin to the point of consumption
22) (to) keep track of something	v) a feature
23) a supply chain	w) involving, making you feel like taking part in it
24) a customer relationship	x) previous knowledge or experience
25) (to) record data	y) (to) make something efficient
26) (to) improve	z) (to) make something produce more items
27) a reminder	aa) links with your clients
28) (to) keep something in mind	bb) a person responsible for some project
29) accounting	cc) making a problem disappear
30) a background	dd) room or opportunity to do something outstanding
31) (to) tend	ee) (to) follow or monitor something

2.3 Make up sentences using the following prompts:

A. They, in accounting, and, keep track of, record data, money, financial.

B. Trust, the best, built on, customer relationships.

C. The most, of, trait, manager, is, to make a decision, important, the ability.

D. To monitor, all over, an IS specialist, the duty, of, flow of goods, the supply chain.
E. Create efficiency, increase performance, and, help, to, IS specialists, professional.
F. Fluent in English, if, are, you, no problem, a report, to publish, it is.
G. Family problems, him, didn't, to focus, career path, on, his, allow.

2.4 Finish the sentences using your own ideas or ideas from the text:

A. Before exams I tend to…
B. Improving my personality means…
C. It is important to record data when…
D. I received a reminder from my friend about…
E. In the morning I have to keep in mind that…
F. Specialists in accounting…
G. Making a decision for me is…
H. The main trait of my character is…
I. If I need to focus on something I…
J. A software developer's job is to…
K. My mother's career path includes…
L. I can say that I am fluent in…
M. Problem-solving skills can be developed…
N. Shopping malls serve the needs of…
O. Doing a research bridges the gap between…and…

3 Writing activities

3.1 Write a letter of 250 words to your imaginary pen-pal abroad describing your career plans after graduating from the university.

UNIT 4. What is a Business Informatics Management model

1 Reading activities

1.1 What do you know about models? Where are they used? Do you think models help to organize a process?

1.2 Divide the text into 2 big parts and give each one a heading.

1.3 Which part tells us about the goals of MBI models, and which – about their basic principles?

1.4 How many specific IT management issues does the text mention?

1.5 What factors are mentioned as crucial for the performance of enterprise IT systems?

1.6 Decide if the following statements are true or false, using the text:

A. MBI models are applied only for organizations which use IT services.
B. MBI models help only with general IT management issues.
C. MBI models directly help to improve the overall business performance.
D. MBI models monitor IT investment profitability.
E. MBI models do not consider legal aspects.
F. MBI models use several different metrics systems.
G. MBI models can be used for different types of organizations.
H. MBI models are difficult to upgrade.
I. You can use an MBI model only as a whole.

1.7 Answer the following questions on the text:

A. What kind of methods do MBI models use?
B. When does this model use best practice solutions?
C. What features characterize performance of IT systems?
D. Can we learn about an employee's duties with the help of these models?
E. What does the model's metrics system assess?
F. Why is it more efficient to deal only with some problematic areas?
G. Why is it important that the model can be used in smaller businesses as well?

1.8 Summarize the main ideas of the text using the questions from activity 1.7 as a plan.

Management of Business Informatics Model

The primary objective of the MBI model is to provide a support for IT management activities in companies that figure as users of IT services. The MBI model provides a consistent and flexible business informatics management methodology that incorporates the best practice guidelines for specific industry domains. The model helps IT practitioners to:

- document and analyze an existing system of business informatics management,
- design and implement a new (improved) management system,
- obtain an advice and best practice solutions for specific IT management issues such as:

How to develop an information strategy? How to prepare IT budget? What is the concrete structure and content of SLA (Service Level Agreement) for application services delivered in the form of Software as a Service? The MBI model helps organizations to improve the performance of enterprise IT systems more specifically the quality, availability, security and effectiveness of IT services, and indirectly the overall business performance.

To address such requirements, the following key principles of the MBI model were defined:

1. The model supports an organization's business strategy in defining strategic applications of business informatics as well as in monitoring IT investment profitability.

2. The model allows a control of all key features of enterprise information system

- Required functionality inclusion
- Availability, Timeliness, Accuracy and Trustworthiness of required functions and information
- Compliance with legislations
- Reliability
- User-friendliness
- Security
- Flexibility
- Openness
- Integrity
- Standardization
- Performance
- Effectiveness

3. The model records all responsibilities and authorities within an organization in the context of business informatics.

4. Business informatics management is based on a coherent system of metrics that evaluate all important IT services, IT processes and IT resources.

5. The model provides various levels of detail (granularity) of management tasks and metrics that correspond to the requirements of different organization types.

6. The model rapidly responds to changing needs of business informatics, its content and functionality is easily extendable and upgradable.

7. The application of MBI model in practice offers a high flexibility. Implementation of individual model components (tasks) is supported without having to implement the entire model. Considering a significant effort involved in a comprehensive business informatics system implementation, it is often more effective to address only those areas identified as the most problematic, or with the highest impact on an enterprise performance and its success.

8. The model is effectively deployable in organizations of a different size and operating in different industry sectors. Model implementation respects specific conditions under which an organization operates including its financial and human resources allowing a successful application of the model in small businesses that typically have limited financial and human resources.

2 Vocabulary activities

2.1 Study the wordlist and find the words related to business activity and the words, describing features of objects. Use a dictionary if necessary:

Objective, flexible, (to) incorporate, a guideline, (to) obtain, an issue, (to) prepare budget, (to) develop a strategy, (to) deliver, overall, investment profitability, accuracy, (to) comply with legislation, reliability, integrity, authority, coherent, (to) evaluate, (to) correspond to, (to) consider, comprehensive, an impact, (to) identify, (to) deploy, (to) operate.

2.2 Match the words with their synonyms or definitions:

1) objective	a) (to) get financial documents ready
2) accuracy	b) (to) get

3) an issue	c) (to) create a plan for distant future
4) reliability	d) (to) include
5) integrity	e) including all aspects
6) authority	f) logically connected
7) an impact	g) the ability to repay the money you put in
8) investment profitability	h) having all parts together as a whole
9) a guideline	i) the quality of being able to be trusted
10) flexible	j) a question or a small problem
11) overall	k) the quality of being precise
12) coherent	l) a goal or a purpose
13) comprehensive	m) a basic principle or direction
14) (to) incorporate	n) resilient or adaptive
15) (to) obtain	o) influence or effect
16) (to) prepare budget	p) (to) bring
17) (to) develop a strategy	q) (to) study
18) (to) deliver	r) (to) agree with
19) (to) comply with legislation	s) (to) assess
20) (to) evaluate	t) (to) put
21) (to) correspond to	u) (to) work
22) (to) consider	v) (to) determine the identity
23) (to) identify	w) (to) be according to laws
24) (to) deploy	x) power
25) (to) operate	y) general, covering everything

2.3 Finish the following sentences using your own ideas:

A. Reliability of this principle depends on…
B. If you want to develop a strategy, you should…
C. Our Educational incorporates…
D. To comply with the legislation, our company should…
E. My main objective is …
F. Accuracy of calculation depends on…
G. We should consider this issue …
H. Investment profitability of a project means that …

I. Our manager has the authority …
J. We need to evaluate the pros and cons of …
K. The impact of your actions can be …
L. Comprehensive secondary education means that …
M. To obtain a discount you should …

2.4 Paraphrase the sentences using words and collocations from Activity I:

A. We must study the pluses and minuses of this project.
B. Everything should be according to law.
C. This subject includes various activities.
D. We need to think over our long-term plans.
E. This document outlines the basic principles and directions.
F. His report presents the data very logically, with each item connected to the previous one.
G. We can put our thing right here.
H. We determined his actual reasons.
I. The general principle of this project is to pay back the invested capital as soon as possible.

3. Writing activities

3.1 Choose one of the principles for MBI models from the text a prepare a short report (250 words minimum) using The Internet as a resource.

UNIT 5. Management of business processes

1 Reading activities

1.1 Read the text and match the paragraph headings with the paragraphs:

A. An office operating like a production line.
B. A system is more efficient than traditional automation.
C. Limited use of BPMS.
D. The advantages of using BPMS.
E. Recent changes in the use of computer systems.
F. Saving time and money.

1.2 Which paragraph tells us about:

A. how computer systems exercise control over employees?
B. flexibility of the new system?
C. old approach limiting the role of BPMS only to giving advice?
D. BPMS making control easier?
E. BPMS increasing employee interaction?
F. an analogy between BPMS and object-oriented programming?

1.3 Put the sentences, summarizing the main idea of each paragraph, in the correct order:

A. A new system makes an office work like a production line.
B. In the past computer systems only identified mistakes in operation and gave advice.
C.BPMS reduce costs and improves quality and adaptability.
D. Recently computer systems have been involved in decision-making.
E.BPMS advantages look similar to those of object-oriented programming.
F. The new approach saves time and money during decision-making and problem-solving.

1.4 Answer the following questions on the text:

A. What was the limitation in the use of business process management systems?
B. What is the principal change in the use of computer systems at present?
C. Who decides on the order of task execution?
D. What stages can be excluded with this new approach?
E. What kind of businesses allows to simplify the control function?
F. Why is it not necessary to write a code with this new system?
G. What new name can be given to this new system?

Designing executable business processes as a programming paradigm

1. Despite the fact that the first analogues of modern business process management systems (at that time they were called workflow systems) appeared more than fifteen years ago, until recently, most of the process management works were limited by the study of production activity of

enterprises, identification of repetitive chains of actions, formalization and integration of these chains into completed business processes, analysis of selected business processes, and development of recommendations for changes in business processes so that at the same time the operating efficiency of the enterprise increased. This did not imply automated execution of business processes.

2. The use of computer systems was limited only to business process modeling. That is, after the development or modification of a business process it was introduced to organizations by administrative methods, which are long, clumsy and expensive. In recent years, quality changes occurred in this field. Currently, enterprises have been actively implementing computer systems directly executing business processes in the computer environment which are called the business process management system (BPMS). These systems distribute tasks to the executors and monitor their implementation. The sequence of tasks is determined by the business process diagram. Control points move across the diagram; in the design modes control points generate tasks for the executors.

3. Thus, at an office-type enterprise, an analogue of the production line appears: this mechanism makes it possible to exclude routine operations from the employees' actions, inefficient procedures related to information search and transmission, and significantly to increase the rate of employee interaction. This is due to the fact that by using BPMS, employees accomplish received tasks sticking to receiving data required for task execution from other employees; they transmit the results of their work to other employees; and they study the job descriptions. All information needed to perform the task appears on the employee's computer screen.

4. At enterprises with stable recurring chains of operations, the use of BPMS provides other advantages: significantly simplifies the control activities for works in progress and increases the transparency of business operations; improves the enterprise product quality: through automatic regulatory activity and monitoring tools to observe all rules provided makes it possible to promptly change business processes in response to the changing business environment of the enterprise; makes it possible to solve the problem of enterprise scale integration; reduces the cost of enterprise automation, and improves the rate of software development and reliability.

5. Let us explain the last item in the list. Reducing costs is one of the reasons for selecting a process automation option. In the traditional ap-

proach, at the beginning a detailed technical project (in the form of a plain text) is drawn up. This is approved by the customer, and subsequently it is converted to program code by software programmers. Automation based on executable business processes makes it possible to eliminate duplication: in this case, the analyst immediately develops executable business processes, which are approved by the customer and do not have to be translated into a program code. Therefore, the development time and costs of the work of the executors are significantly reduced. Automation based on executable business processes makes it possible to quickly adapt the development to changing problems and new ideas started up in the course of development, to reduce development costs, to reduce the technical support costs, and significantly to reduce the cost of modifications and maintenance.

6. Thus, system implementation, customization and management, based on executable business processes prove to be faster and cheaper as compared to traditional automation in which separate application components are developed for various problems and functions. These advantages (faster, cheaper, easier to support and maintain) coincide with the paradigm advantages of object-oriented programming as compared to procedural programming. By analogy, the activity of designing executable business processes can be called a new programming paradigm.

2 Vocabulary activities

2.1 Study the wordlist using a dictionary if necessary and find the words related to business:

(to)execute, a paradigm, despite, workflow, a repetitive chain of actions, (to) develop recommendations, (to) imply, a modification, (to) introduce, clumsy, (to) occur, (to) distribute tasks, a sequence, (to) determine, (to) generate, (to) exclude, transmission, (to) accomplish a task, a recurring chain of operations, transparency, promptly, a response, (to) reduce costs, plain (adj.), immediately, (to) eliminate, (to) approve, customization, (to) prove, (to) coincide with.

2.2 Make up common collocations using the text:

a) business	1) tasks
b) a chain	2) of operations
c) (to) distribute	3) of actions
(to) reduce	4) a problem

d) (to) accomplish	5) results
e) a chain	6) occur
f) (to) develop	7) possible
g) (to) solve	8) costs
h) (to) transmit	9) code
i) changes	10) recommendations
j) program	11) processes
k) make it	12) tasks

2.3 Match the words with their synonyms or definitions:

1) (to) execute	a) (to) set or define
2) a paradigm	b) awkward or inconvenient
3) despite	c) succession
4) workflow	d) (to) create
5) a repetitive chain of actions	e) (to) tell each person what to do
6) (to) develop recommendations	f) (to) bring into use for the first time
7) (to) imply	g) (to) work out a set of tips
8) a modification	h) a set of ideas or practices used as a model
9) (to) introduce	i) (to) happen
10) clumsy	j) a small change
11) (to) occur	k) though
12) (to) distribute tasks	l) fulfill
13) a sequence	m) actions repeating themselves in the same order
14) (to) determine	n) (to) mean
15) (to) generate	o) work viewed as a process
16) (to) exclude	p) reaction
17) transmission	q) (to) match
18) (to) accomplish a task	r) a repetitive set of jobs
19) a recurring chain of operations	s) (to) show that something is true using facts
20) transparency	t) obvious and easy to see
21) promptly	u) (to) agree or say that something is good or right

22) a response	v) (to) make something disappear
23) (to) reduce costs	w) adapting to requirements of a particular customer
24) plain	x) passing
25) immediately	y) (to) complete a job
26) (to) eliminate	z) simple
27) (to) approve	aa) in good time
28) customization	bb) (to) make something more economical
29) (to) prove	cc) at once
30) (to) coincide with	dd) (to) stop including

2.4 Finish the sentences using your own ideas:

A. Transparency in giving an exam mark can be achieved…
B. Customization of a mobile app is done …
C. My usual response to bad news is…
D. I do not approve of …
E. We can eliminate errors …
F. Immediately after classes I …
G. Sometimes my actions do not coincide with …
H. To accomplish a really difficult task I need …
I. Transmission of information from managers to employees …
J. His clumsy movements proved to me that …
K.A change of paradigm in computer technology occurred when …
L. Managers usually distribute tasks …
M. I want to introduce new rules in …

2.5 Paraphrase the sentences using the words from the wordlist:

A. You must finish this job.
B. His reaction to the news was rather nervous.
C. You need to make this process more economical.
D. This task must be done at once.
E.A new program will make all errors disappear.
F. She won't be included on the list of participants.
G. Doing a repetitive set of jobs every day makes me feel depressed.
H. He created a new password.

I. To make this program work properly we need to work out a set of tips.
J. We should bring into use these new principles.
K. You should tell each person what to do.
L. Bad thing happen all the time.

3 Speaking activities

3.1 Look up the Internet to find out, what companies successfully implement Business Process Management Systems, and prepare a short presentation 7-8 minutes long for the group.

UNIT 6. Specific features of a BI specialist's job

1 Reading activities

1.1 How competent are you at programming? Do you know any programming languages?

1.2 Read the text and match paragraph headings with the paragraphs:

A. Private iPhone apps.
B. IS specialists can't do coding.
C. It's cheaper to on-shore.
D. The app creation procedure.
E. Outsourcing programmers using the Web.
F. Choosing a developer.
G. On-shoring and off-shoring.

1.3 Which paragraph tells us about:

A) two types of outsourcing?
B) the degree to which IS specialists know programming?
C) one specific type of iPhone apps?
D) IS specialists working as intermediaries?
E) looking for programmers online?
F) preparing documents for developers?
G) the real costs of hiring programmers in other countries?

1.4 Put the sentences, summarizing the main idea of each paragraph, in the correct order:

A. IS specialists act as middlemen between business units and developers.
B. On-shoring and off-shoring.
C. IS specialists are not taught programming properly.
D. On-shoring has recently become more viable than off-shoring.
E. On-line resources help to find developers.
F. The developer you've found should be reliable.
G. Why we sometimes need private apps for iPhone.

1.5 Answer the questions on the text:

A. Why do IS specialists not know programming?
B. Who does an IS specialists communicate with?
C. What does paragraph 3 exemplify?
D. What makes finding developers from outside the company easier?
E. How is off-shoring different from on-shoring?
F. What else besides money is important when choosing a developer?
G. What prevents US companies from off-shoring?

1.6 Answer the questions on the text:

IS Professionals Serve the Role of an Intermediary

1. To actually program an iPhone app requires fairly extensive programming knowledge. Apps are programmed in a language called *Objective C*. This is beyond the scope of most information systems (IS) business analysts. IS professionals hire the programmers, rather than doing the coding themselves. In fact, most IS curricula teach programming only so that the business analyst is able to communicate effectively with programmers by speaking a bit of their language and understanding some of their constraints.

2. Within a large corporation there will typically be a team of developers (usually computer science majors) and a team of business analysts (usually IS majors). The business analysts communicate with the business units, such as marketing or finance, to analyze the business needs. They then translate those needs into requirements that are delivered to the developers. The developers program the application and then deliver it back to the business analysts for testing. In this way, IS professionals serve as the bridge between the developers and the business units. The business

analyst's job continues even after the app is developed. They test the app extensively when it is delivered back from the developer.

3. Most of the iPhone apps, which you are familiar with, are designed for the consumer market. However, there are a number of corporations that design in-house private iPhone apps for their employees. If you were designing your app for a company you would serve as the intermediary between the business unit and the developers.

4. Some corporations, especially small ones, do not retain a team of developers. They rely on the ability to contract out development work. With the development of the web, the process of locating programmers has become much easier. There are a number of portals such as Elance.com that allow you to auction off your job much the same way that you would auction a product on eBay. Developers then bid on your job and you select your preferred developer. To help you in the decision, these services also maintain ratings of developers based on feedback from previous clients.

5. The process of bidding out a job to a developer outside of your corporation is called outsourcing. Outsourcing comes in two types depending on where the developer is located. Outsourcing to a local developer is called on-shoring. Outsourcing to a developer in another country is called off-shoring. Off-shoring is a popular movement among North American companies due to the high cost of skilled labor in the United States. Many developers live offshore in countries such as India, Pakistan, Russia, and Brazil.

6. One key factor in outsourcing is communicating clearly with the developer. Any documentation that you prepare in advance helps reduce the possibility of misunderstandings. That is why we spent time planning the app and constructing a mockup. Choosing a developer is not about getting the lowest price, but rather about getting the best value. You want a good developer, but maybe you do not need the best. Make sure that your developer has a reputation for delivering on time and within budget. Furthermore, you often get what you pay for. Cheaper developers may deliver lower quality.

7. There is a myth of developers in third world countries working practically for free. However, as countries such as India, Pakistan, and Russia become wealthier, the wages rise. The offshoring process is imperfect and some U.S. companies have found that documentation requirements are so extensive, and communication problems so prevalent, that it is almost cheaper in the end to hire a local programmer somewhat

familiar with the business already. Some portals, such asiPhoneAppQuotes.com, advertise on-shoring as their competitive advantage. Many companies provide iPhone quotes. Elance.com is more general and worldwide, developing lots of different kinds of systems with developers all over the world.

2 Vocabulary activities

2.1 Study the wordlist using a dictionary if necessary and find the words related to business and IT:

An application, (to) be beyond the scope of, (to) hire, a constraint, a major, a business unit, (to) deliver, a developer, (to) serve as the bridge, extensive, (to) be familiar with, in-house, an intermediary, (to) retain, (to) rely on, (to) locate, (to) auction off, (to) bid on smth., (to) prefer, feedback, a movement, skilled labor, in advance, (to) construct a mockup, (to) get the best value, within budget, wages, competitive advantage, a quote, a consumer market.

2.2 Make up common collocations using the text:

a) (to) develop	1) unit
b) beyond	2) as the bridge
c) a business	3) a mockup
d) (to) serve	4) the best value
e) skilled	5) an application
f) (to) construct	6) advantage
g) (to) get	7) the scope
h) competitive	8) labor
i) (to) communicate	9) market
j) a consumer	10) factor
k) a key	11) effectively

2.3 Match the words to their definitions or synonyms:

a) An application	1) wide
b) (to) be beyond the scope of	2) a designer of computer programs
c) (to) hire	3) a department
d) a constraint	4) (to) bring or get
e) a major	5) before or earlier
f) a business unit	6) (to) like more than others

g) (to) deliver	7) regular payment for work
h) a developer	8) (to) get the best quality
i) extensive	9) a specialized computer program
j) (to) be familiar with	10) a price
k) (to) serve as the bridge	11) (to) know well
l) in-house	12) qualified workers
m) an intermediary	13) (to) build a model
n) (to) retain	14) (to) spend an agreed sum of money
o) (to) rely on	15) (to) offer a job to people outside the company
p) (to) locate	16) (to) connect
q) (to) auction off	17) a difficulty
r) (to) bid on something	18) people buying something for personal use
s) (to) prefer	19) inside the company
t) feedback	20) (to) pay somebody money to do a job
u) a movement	21) the main university subject
v) skilled labor	22) (to) keep
w) in advance	23) (to) find
x) (to) construct a mockup	24) a trend
y) (to) get the best value	25) opinion given after an event
z) within budget	26) a feature making a product better than other similar products
aa) wages	27) a middleman
bb) competitive advantage	28) (to) count on or trust
cc) a quote	29) not included
dd) a consumer market	30) (to) struggle to get a job by telling how much you quote

2.4 Finish the sentences using your own ideas:

A. Talking about cuisines, I prefer …
B. Management is beyond the scope …
C. An interesting movement these days is …
D. There is an app on my mobile which …

E. Teachers should get feedback …
F. To locate a Pokemon you should …
G. I am familiar with …
H. My major at the university is …
I. We get extensive training in …
J. To become a program developer you …
K. We have to construct a mockup if …
L. The person I can rely on is ….
M. One serious constraint with university education is …

2.5 Paraphrase the sentences using the vocabulary from the wordlist:

A. What is the price of your services?
B. She is a kind of middleman between the people and the government.
C. Why is your product better than other similar ones?
D. When do you get your payment for the work?
E. We do it inside the company.
F. We decided to offer this job to somebody not from our company.
G. He creates computer programs.
H. What was your main subject at the university?
I. Qualified work should be compensated adequately.
J. Our department includes 25 employees.
K. he asked to pay him earlier than the job was completed.
L. This product is not sold to individual customers, only to businesses.
M. We should pay somebody to do this job.
N. First you must build a model and see if it works.
O. We can't spend more than we agreed on.
P. If they refuse, we will keep the money.
Q. If you want the best quality, it can't be cheap.

3 Writing activities

3.1 Search the Internet and find companies auctioning off software development jobs. Prepare a short report (150 words) analyzing the offers and bids from developers. The name of one of such sites is mentioned in the text.

Chapter II. Business Informatics in business activity

UNIT 7. Types of business analyses

1 Reading activities

1.1 Have you ever considered starting your own business? If so, then what kind of business would that be?

1.2 Read the text and match paragraph headings with paragraphs:

A. iPhone sector analysis.
B. Establishing growth potential.
C. SWOT analysis.
D. The importance of industry analysis.
E. M. Porter's analysis.
F. Investor's view.

1.3 Which paragraph tells us about:

A. The danger of lying to investors?
B. Factors determining an industry's attractiveness?
C. What you should do before starting your own business?
D. Fast growth rate of the iPhone sector?
E. What your report should include?
F. A four cell grid?

1.4 Put the sentences, summarizing the main idea of each paragraph, in the correct order:

A. Different ways of showing growth potential.
B. The five forces model.
C. What is SWOT analysis.
D. Two types of analysis important for investors.
E. Showing an industry's growth potential.
F. Five forces analysis for iPhone sector.

1.5 Answer the questions on the text:

A. What should you do before starting your own business?
B. How can you determine a sector's growth potential?
C. What does the content of an industry's analysis depend on?
D. Where is SWOT analysis popular?

E. How do they usually show SWOT analysis?
F. What does Porter's analysis help to find?
G. What are barriers to entry for iPhone sector low?
H. Why does iPhone sector remain attractive?

1.6 Summarise the main ideas of the text using Activity IV as a plan.

Industry Analysis

1. Before launching a business venture with your capital, or someone else's, it is a good idea to analyze the overall attractiveness of the industry. An industry analysis makes no reference to your particular company. In other words, how likely to succeed would any new company be in this industry? Are there parts of the industry that are more attractive than others? Loan officers or investors especially, are going to want to see an analysis of the industry. One thing they will look for is growth potential. If you can show that the industry is rapidly growing, you may get funding. From an investor's point of view, they might simply want to have a dog in the race—even if your company is not necessarily the best dog overall—it may still be the best dog on hand.

2. One can establish growth potential by showing trends over time. For apps this would include showing growth in sales of apps and the platforms on which the apps run—iPhone, iPod, iPad. If your app duplicates functionality found in another device, a turn by turn GPS for example, then you could show growth in the GPS industry. You might also want to show growth of competing platforms and apps such as the Droid. However, you should be honest and straightforward about your statistics. Investors are smart and can see through hype and deception.

3. The content of an industry analysis depends on the purpose of the report. There is no one size fits all. However, if the business is seeking funds, investors will at a minimum want to see two things:

- Industry analysis: An analysis of the industry in which the company operates. What are the opportunities and threats inherent in the industry?
- Company analysis: An analysis of the competitive position of the company within that industry. What are the strengths and weaknesses of the company?

4. There are a number of analysis techniques designed to get at both the industry and company analysis. We will look at just two. The first is

very popular in the marketing discipline. It is an analysis of strengths, weaknesses, opportunities, and threats (S.W.O.T.) analysis developed by Albert Humphrey in the 1960s. The strengths and weaknesses compose the company analysis, whereas opportunities and threats compose the industry analysis. You can consider the strengths and weaknesses as describing the current state of the company. The proposed future state of the company will be planned taking into account the opportunities and threats. It is conventional to show a S.W.O.T. analysis in a four cell grid.

5. Another very popular analysis tool is Michael Porter's five forces model. Porter analyzes an industry by looking at how hard it is to get in the industry (barriers to entry), stay in the industry (threat of substitutes), and the bargaining position of suppliers to and buyers of industry products and services. This helps identify the attractiveness of the industry. You might think of Porter as helping to direct our focus to where the opportunities and threats might be found. The fifth force is the competitive position of industry rivals — their strengths and weaknesses.

6. For example, with respect to your iPhone app, you might argue that barriers to entry are very low. There are thousands of iPhone developers and it cost relatively little to develop an iPhone app. The threat of substitutes includes the competing Droid and other smart phones and apps. Suppliers to your industry include Apple, which supplies the iTunes store for distribution and the developers. Apple's bargaining power is very high since you must list your app on their store and pay their commission. However, the bargaining power of developers is relatively low since they compete in an open auction for your business. The bargaining power of buyers is very strong since they can purchase from you or any of your competitors. The only thing that makes this industry attractive is that it is growing at such a phenomenal rate that there are business opportunities even for weak players. As the industry matures, the weaker players will probably get squeezed out.

2 Vocabulary activities

2.1 Study the wordlist using a dictionary if necessary and find the words related to business and sport:

(to) launch a business venture, an industry analysis, (to) make reference to, (to) be likely to, a loan officer, growth potential, a dog in the race, (to) compete, hype, (to) seek funds, inherent, strengths and weaknesses, current state, (to) take into account, conventional, a grid, barriers

to entry, bargaining power, (to) argue, a supplier, an open auction, at a phenomenal rate, a business opportunity, a weak player, (to) squeeze out.

2.2 Make up common collocations using the text:

a) (to) launch	1) officer
b) an industry	2) in the race
c) (to) make	3) funds
d) a loan	4) and weaknesses
e) growth	5) into account
f) a dog	6) reference to
g) (to) seek	7) to entry
h) strengths	8) power
i) current	9) a business venture
j) (to) take	10) potential
k) barriers	11) opportunity
l) bargaining	12) rate
m) an open	13) analysis
n) a business	14) player
o) at a phenomenal	15) auction
p) a weak	16) state

2.3 Match the words to their definitions or synonyms:

a) (to) launch a business venture	1) a company providing another company with raw materials
b) an industry analysis	2) an natural or inseparable part of
c) (to) make reference to	3) traditional
d) (to) be likely to	4) an auction where all participants are in equal position
e) a loan officer	5) a company with a bad position in the market
f) growth potential	6) a competitor
g) a dog in the race	7) (to) take into consideration
h) (to) compete	8) factors preventing you from entering some market
i) hype	9) (to) start a business
j) (to) seek funds	10) present situation
k) inherent	11) (to) make a connection with

l) strengths and weaknesses	12) a specialist in lending money
m) current state	13) how fast something can grow
n) (to) take into account	14) with great speed and scale
o) conventional	15) a chance to make a profit
p) a grid	16) excessive advertising
q) barriers to entry	17) a research analyzing a situation in a business sector
r) bargaining power	18) (to) claim or disagree
s) (to) argue	19) (to) force somebody to leave
t) a supplier	20) (to) have a high probability
u) an open auction	21) advantages and disadvantages
v) at a phenomenal rate	22) (to) take part in competition
w) a business opportunity	23) a pattern of straight line that cross each other
x) a weak player	24) strong points in a bargain
y) (to) squeeze out	25) (to) look for money

2.4 Finish the sentences using your own ideas:

A. When you start your own business you should take into account …
B. The weather in our parts in summer is likely …
C. The main barriers to entry to the Russian market are …
D. There is always much hype …
E. The current state of preparation for World Football Cup …
F. I often argue with my parents about …
G. Conventional approach to exam preparation is …
H. An inherent feature of Russian mentality is …
I. People usually compete for …
J. The main strengths and weaknesses of Russian economy are …
K. Companies usually seek funds …
L. There are a lot of business opportunities in …

2.5 Paraphrase the sentences using the vocabulary from the wordlist:

A. IT is a great chance to make a profit.
B. Your approach is traditional.
C. This company was forced out of the market.
D. Their business was developing very fast.

E. There some factors preventing us from entering this market.
F. There is a high probability for us of losing money.
G. They are just one of competitors.
H. It is time to start looking for money.
I. He works in the Loans Department.
J. Let's consider your advantages and disadvantages.
K. The present situation in this market inspires optimism.

3 Speaking activities

Think of the company whose activity you are familiar with, look up the Internet and prepare SWOT analysis of this company. Present the results of your analysis to the group.

UNIT 8. Explaining business processes using graphs

1 Reading activities

1.1 Do you often draw graphs at Math lessons? What kind of information is usually presented as graphs?

1.2 Read the text and match paragraph headings with paragraphs:

A. Main principles of analytic design.
B. The purpose of using graphs.
C. Turfe's contribution to analytical design.
D. How to show reasons for changes.
E. The role of content.

1.3 Which paragraph tells us about:

A. when graphs are popular?
B. popularity of Edward Turfe?
C. correlation between X and Y axis?
D. showing more than two variables on graphs?
E. a way to point out the cause of some trend?

1.4 Put the sentences, summarizing the main idea of each paragraph, in the correct order:

A. Edward Turfe as the founder of the graph theory.
B. The most common use of graphs.

C. Methods of showing reasons for changes.
D. The content is more important than the graphic representation.
E. Turfe's instructions on how to design graphs.

1.5 Answer the questions on the text:

A. Where are graphs regularly used?
B. What is the problem with the graphs showing trends?
C. When is it better to show relative amounts visually?
D. What kind of discipline is analytical design?
E. Why, according to Turfe, are comparisons so important?
F. What does the data sometimes suggest?
G. Why is it important to show more than two variables?
H. What does Turfe mean by "whatever it takes"?
I. What does it mean "to be thorough" when drawing a graph?
J. What is even more important than the design of the graph?

1.6 Summarize the main ideas of the text using Activity 1.5 as a plan.

Representing Industry Information Using Graphs

1. Graphs are regularly used for presentations in corporate board rooms. The most prevalent use of corporate graphs is to show trends over time, such as sales per quarter. These graphs are especially popular when the trend is on the rise.

2. A problem with graphs that show trends over time is that they show the changes in trend patterns, but they fail to show the reasons for these changes. One solution is to annotate a time series graph to point out the causal event. Other business uses of graphs are to show relative amounts visually. This is especially helpful when the numbers are large and hard to relate to.

3. There are sound principles for the display of quantitative information. Perhaps the greatest theorist in the quantitative arena is Edward Tufte. He has written a number of books and articles on the subject and draws huge audiences worldwide when he speaks. Tufte virtually founded the field of analytical design—the field that studies how best to represent information—especially quantitative information. He has developed a number of principles over the years.

4. However, in his latest book, Beautiful Evidence, published in 2006, he organized the principles under six major headings:

A. Show comparisons, contrasts, differences. Comparisons inform and invite reflection by the reader. For example, showing the growth rate of platforms using the Mac iOS vs. other smartphone operating systems helps show if the market is growing or shrinking.

B. Show causality, mechanism, explanation, systematic structure. Sometimes the data clearly suggest a cause or lack of a cause. For example, many predicted a drop in iPhone 4 sales after news that the antenna dropped calls when held in a certain way. But the predicted sales drop was not borne out by the data and the product launch was wildly successful.

C. Show multivariate data. That is show more than one or two variables. The more variables graphed, the greater the chance of providing a clear causal explanation. For example, better to show sales of paid apps and free apps per platform.

D. Completely integrate words, numbers, images, diagrams. Tufte sometimes calls this "whatever it takes." Annotate your graph if that helps explain the data. For example, on a time series you should label key events.

E. Thoroughly describe the evidence. Provide a detailed title, indicate the authors and sponsors, document the data sources, show complete measurement scales, point out relevant issues. For example, always show your data sources and list your name as a author. If the data only holds under certain conditions, then state what those are.

F. Analytical presentations ultimately stand or fall depending on the quality, relevance, and integrity of their content. This may be the most important principle of all. If your content is bad then nothing will save it. Try to tell the truth at all costs.

5. Most of the graph design guidelines come from Edward Tufte's principles of analytical design. These principles require refining the graph after Excel has applied its default settings. Though the design of a graph is important, the content is even more crucial to the delivery of information. Graphs can have good design, but if the data or content is flawed, the graph has no purpose. The data on the X and Y axis of a graph should always have some correlation, or some relationship that can be demonstrated.

2 Vocabulary activities

2.1 Study the wordlist using a dictionary if necessary and find the words related to business and intellectual activity:

A board room, trends over time, (to) fail, (to) point out, (to) annotate, the causal event, sound (adj.), quantitative information, (to) draw audiences, (to) found, (to) invite reflection, (to) shrink, (to) predict, (to) be borne out by the data, a variable, (to) provide an explanation, (to) label, a data source, (to) describe thoroughly, ultimately, relevance, (to) refine, crucial, flawed content, (to) have correlation.

2.2 Make up common collocations using the text:

a) board	1) event
b) trends	2) audiences
c) causal	3) by the data
d) quantitative	4) an explanation
e) (to) draw	5) over time
f) (to) invite	6) source
g) (to) be borne out	7) thoroughly
h) (to) provide	8) correlation
i) data	9) room
j) (to) describe	10) reflection
k) flawed	11) information
l) (to) have	12) content

2.3 Match the words to their definitions or synonyms:

a) board room	1) (to) behave in a similar way
b) trends over time	2) (to) decrease or grow smaller
c) (to) fail	3) a factor or value that can change
d) (to) point out	4) (to) put a sign or write information on something
e) (to) annotate	5) information with mistakes in it
f) causal event	6) where the data was taken from
g) sound (adj.)	7) changes during a period of time
h) quantitative information	8) not to be a success, (to) lose

i) (to) draw audiences	9) reasonable or logical, sane
j) (to) found	10) of critical importance
k) (to) invite reflection	11) (to) attract attention to something concrete
l) (to) shrink	12) (to) briefly describe in writing
m) (to) predict	13) (to) make better or more precise
n) (to) be borne out by the data	14) (to) describe in great detail
o) a variable	15) (to) establish
p) (to) provide an explanation	16) in the end, eventually
q) (to) label	17) importance for this particular case
r) data source	18) (to) try to guess what will happen in the future
s) (to) describe thoroughly	19) (to) be supported by facts
t) ultimately	20) information presented as numbers
u) relevance	21) a room for meetings of the Board of Directors
v) (to) refine	22) (to) make somebody think
w) crucial	23) (to) give a reason
x) flawed content	24) (to) attract lots of people
y) (to) have correlation	25) the event that brought this effect

2.4 Finish the sentences using your own ideas:

A. The causal event for choosing this major was …
B. I can predict what will happen …
C. When my pocket money shrinks …
D. If I fail an exam …
E. The person who can give me sound advice is …
F. The story that invited reflection for me was …
G. When I write a report the main data source is …
H. The Dean asked me to provide an explanation for …

I. The artist that draws great audiences is …
J. I labeled the picture to …
K. Quantitative information can be boring if …
L. The report contained flawed content and …

2.5 Paraphrase the sentences using the vocabulary from the wordlist:

A. His concerts attract lots of people.
B. Information presented as numbers should be accompanied by graphs.
C. He showed us the changes during a long period of time.
D. His explanation looked logical.
E. This factor is of critical importance.
F. You shouldn't describe it in detail.
G. The number of students decreased.
H. Show me where the data was taken from.
I. These two factors behave in a similar way.
J. This factor can change.
K. This company was established 20 years ago.

3 Speaking activities

3.1 Collect the information you find interesting from your groupmates, showing trends over time, and design a graph or a series of graphs. Describe those graphs in a presentation in front of the class.

UNIT 9. The main features of Business Intelligence

1 Reading activities

1.1 How do you usually make decisions? Do you do it emotionally or analyze some facts or information first?

1.2 Read the text and match paragraph headings with paragraphs:

A. Dynamic reports.
B. Data mining.

C. Static reports.
D. What is the meaning of BI.
E. Performance over time.
F. What we need for effective decision-making.
G. Types of Information Systems.
H. An example of using decision-making factors.

1.3 Which paragraph tells us about:

A) how enterprise systems work?
B) connection between BI and Excel?
C) managerial look at decision-making?
D) an example about beer and diapers?
E) rejection of bad quality clothing?
F) a fact-finding tour?
G) bad working conditions?
H) the most common form of BI?

1.4 Put the sentences, summarizing the main idea of each paragraph, in the correct order:

A. Setting goals, measurement system and timely information as factors of decision-making.
B. BI as delivery of information for decision-making, including the use of data bases.
C. Dynamic reports as online interactive fact-finding tours.
D. An example of setting goals, determining a measurement system and information analysis.
E. BI systems as a type of information systems.
F. How time factor helps to improve performance.
G. Using data mining to find patterns and correlations.
H. Using traditional business reports in various business sectors.

1.5 Answer the questions on the text:

A. Why can using Excel be considered BI?
B. What is the subject of BI?
C. What are the types of Information Systems?
D. What do we need for an effective decision?
E. How can we measure product quality?
F. How can we reduce the rejection rate?
G. What is the most popular type of business report?

H. How are dynamic reports different from static ones?

I. What does data mining search for?

1.6 Summarize the main ideas of the text using Activity IV as a plan.

What Is Business Intelligence?

1. Business intelligence (BI) is the delivery of accurate, useful information to the appropriate decision makers within the necessary time frame to support effective decision making. By this definition all the work we have done with Excel would qualify as business intelligence since our deliverables contained accurate and useful information to support effective decision making. However, business intelligence is commonly under stood to include distilling and analyzing large data sets such as those found in corporate databases. Extracting and analyzing information stored in databases is the subject BI. It is very likely that at multiple points in your work career you will be asked to engage in just this type of analysis.

2. Business intelligence is part of the big picture information systems architecture. Most systems in existence can be classified either as enterprise systems, collaboration systems, or business intelligence systems. The enterprise systems—taking orders for example—feed their data to the data warehouse, which in turn is queried to support business intelligence.

3. From a managerial standpoint, there are three factors necessary to make an effective decision:

- Construct a set of goals to work toward.
- Determine a way to measure whether a chosen path is moving closer or farther from those goals.
- Present information on those measures to decision makers in a timely fashion.

4. For example, let's say our goals are to develop a clothing business that produces high quality products while lowering costs. We further determine that we will measure product quality by the percentage of products rejected by inspectors at each station. (Think about those quality inspector tags that you find in pockets of your new clothes. The clothes you are wearing are the ones accepted by the inspector.) A relatively high rejection rate is a red flag to management requiring further analysis. Is this an overzealous inspector? Is there any pattern to the rejected products? Does one station in the factory tend to produce more rejects than the others?

5. We also need to see performance over time. Is product quality improving or getting progressively worse?

Let's say that our analysis determines that the high rejection rate comes from just one factory in Southeast.

Asia. We report the problem to management. They dispatch a team to review the plant. The review discovers child labor, abusive conditions, and very low morale at the plant. The horrible conditions are quickly reversed and the rejection rate returns to average.

6. We will look at three types of business intelligence—static reports, dynamic reports, and data mining. Static reports are by far the most common form of business intelligence. Most businesses have summarized standard reports already laid out and printed to assist in managerial decision making. For example, universities use enrollment reports to gauge which departments might need to hire more faculty. Credit card companies will request reports of persons with high credit scores to target credit card promotions. Similarly, the companies might target college students with good future earning potential. Marketers might look at sales figures for different stores and regions to determine where there are opportunities to run a sales promotion.

7. Dynamic reports look similar to static reports but online and interactive. A manager curious as to where a certain summary number on his dashboard comes from can drill down to expose the detail that contributed to that number. In essence it is a fact-finding tour where information discovered in each step gives clues on where to search next for information. For example, if sales in North America are down, then drill down to discover a problem in the Midwest region. Then drill down farther to discover a problem in the Cleveland, Ohio plant.

8. Data mining uses computer programs and statistical analyses to search for unexpected patterns, correlations, trends, and clustering in the data. In essence, it is fishing through the data to see if there are patterns of interest. One often cited example of data mining was the discovery that beer and diapers are frequently purchased on the same trip to the grocery store. Upon further inquiry marketers discovered that Dad picks up some beer on his trip to the grocery store to buy diapers. Marketers can use this information to place the two items in close proximity in the store.

2 Vocabulary activities

2.1 Study the wordlist using a dictionary if necessary and find the words related to business and IT:

Accurate, appropriate, necessary, a definition, distilling, a time frame, business intelligence, a data set, a corporate database, multiple, (to) engage in, (to) feed data, standpoint, (to) make a decision, a timely fashion, (to) store information, (to) measure quality, performance over time, a rejection rate, (to) dispatch a team, low morale, data mining, (to) gauge, earning potential, sales figures, curious, a summary number, a fact-finding tour, (to) discover information, (to) drill down, clustering, (to) cite, (to) purchase, close proximity, upon further inquiry.

2.2 Make up common collocations using the text:

a) a time	1) fashion
b) business	2) information
c) a data	3) quality
d) a corporate	4) over time
e) (to) feed	5) rate
f) (to) make	6) set
g) a timely	7) data
h) (to) store	8) morale
i) (to) measure	9) potential
j) performance	10) intelligence
k) a rejection	11) number
l) (to) dispatch	12) tour
m) low	13) frame
n) data	14) information
o) earning	15) figures
p) sales	16) a team
q) a summary	17) inquiry
r) a fact-finding	18) database
s) (to) discover	19) proximity
t) close	20) mining
u) upon further	21) a decision

2.3 Match the words to their definitions or synonyms:

a) a time frame	1) a database related to a particular company
b) business intelligence	2) precise
c) a data set	3) making something clean or clear
d) a corporate database	4) intellectual data analysis
e) accurate	5) being more than one in number
f) appropriate	6) amount of data
g) necessary	7) (to) get involved in
h) a definition	8) (to) provide information
i) distilling	9) in good time, without delay
j) multiple	10) a limited period of time
k) (to) engage in	11) (to) keep data
l) (to) feed data	12) (to) assess the level of quality
m) standpoint	13) how something or somebody worked during a certain period of time
n) (to) make a decision	14) suitable for a particular case
o) a timely fashion	15) how often products didn't match quality standards
p) (to) store information	16) (to) send a group of specialists
q) (to) measure quality	17) (to) decide what to do
r) performance over time	18) needed
s) a rejection rate	19) lack of enthusiasm towards work
t) (to) dispatch a team	20) position or point of view
u) low morale	21) an explanation of what something is or means
v) data mining	22) an ability to make a profit
w) (to) gauge	23) results of sales over a certain period of time
x) earning potential	24) eager to learn something
y) sales figures	25) (to) find some data
z) curious	26) (to) go deep
aa) a summary number	27) looking for some particular information inside a big amount of it

bb) a fact-finding tour	28) (to) quote
cc) (to) discover information	29) (to) buy
dd) (to) drill down	30) a figure showing a collective number
ee) clustering	31) (to) measure
ff) (to) cite	32) being located very near to
gg) (to) purchase	33) after additional investigation
hh) close proximity	34) putting separated information bits into chunks
ii) upon further inquiry	35) a task aimed at finding some information

2.4 Finish the sentences using your own ideas:

A. Last month I purchased …
B. The author whom I often cite is …
C. I prefer to discover information …
D. I am usually not curious about …
E. A corporate database has to include …
F. My standpoint on the problem of computer game addiction is
G. Some clothes are not appropriate …
H. A rejection rate of some product shows …
I. When you prepare a report it's necessary …
J. If you data are not accurate …
K. They decided to dispatch a team to …
L. If the staff has low morale …
M. The time frame for retaking the exam is …

2.5 Paraphrase the sentences using the vocabulary from the wordlist:

A. She was eager to know the result of the test.
B. It should be done in good time before the event.
C. After more investigation we found the truth.
D. We are interested to know how efficiently the plant works during a certain period of time.
E. The staff are disinterested in the results of their job.
F. They sent a group of specialists to study the root of the problem.
G. Can you show me how many goods we sold last month?

H. My point of view is that this position should be eliminated.
I. You should wear the clothes suitable for the occasion.
J. Let's find out how much profit we can get from the sales of this item.
K. Where do you keep all the data?

3 Speaking activities

3.1 Search the Internet and prepare a report about static and dynamic reports and the difference between them. Present the results of your project to the group.

UNIT 10. The use of data bases in BI

1 Reading activities

1.1 What do you know about databases? Have you ever used or maybe even created one?

1.2 Read the text and match paragraph headings with paragraphs:

A. Relational databases.
B. Drawbacks of one table databases.
C. Examples of databases.
D. Data entering and extraction.
E. Specific features of Class App store database.
F. How data is stored.

1.3 Which paragraph tells us about:

A. The danger of data duplication?
B. Using spreadsheets for joining information?
C. Student enrollment data?
D. Data extraction using reports?
E. Primary and foreign keys?
F. One-to-many relationship?

1.4 Put the sentences, summarizing the main idea of each paragraph, in the correct order:

A. Forms for entering and reports for extraction.
B. Databases are used by all sorts of organizations.
C. Solving the problem of one table databases.
D. The system of parent and child tables.
E. The App table and the Sales table at the heart of the Class App store.
F. Storing data in multiple files to avoid duplication.

1.5 Answer the questions on the text:

A. What kind of information do university enrollment systems contain?
B. How is a database organized?
C. What do we need to get information in and out of a database?
D. Why is data stored in multiple files?
E. How are the 2 tables in Class App store linked?
F. How is data extracted from App Store databases?
G. What is the principal inconvenience of one table databases?

1.6 Summarize the main ideas of the text using Activity IV as a plan.

Databases

1. In all of the forms of BI you must actually store data to analyze. Organizations store their data in databases connected to their production systems. Here are some examples:

- Banking transaction systems store data in databases containing information about customers, accounts, and transactions against those accounts.

- University enrollment systems store data in databases containing information about students, faculty, courses, and enrollment in those courses.

- Cell phone billing systems store data in databases containing information about customers, rate plans, and calls made.

2. What do these databases actually look like? They consist of tables of data that are related to each other. This is called a relational database. Each table must have a unique identifier that is called a primary key. The database is organized into parent and child tables to avoid duplicating data. Data common to each child is stored in the parent table. Diagrammatically a parent table points to its child tables. Each parent record can

have zero or more child records. To logically link the tables together simply repeat the primary key as a foreign key in each corresponding record of the child table. To get information in and out of a relational database requires a relational database management system (RDBMS) such as Microsoft Access.

3. The goal of the system is to facilitate transactions while safeguarding the integrity of the data. The theory behind database design is one of the most elegant areas in all of information systems. If you continue in information systems, you will see it in detail. However, for our purposes all we need to know is that data is typically stored in multiple files even if the report that we get is contained in a single file. Why? The simple answer is that we want to avoid duplicating data by storing information common to each child in the parent table. Why do we care? Because duplicated data opens up a possibility that one of the duplicates will be different in an important way. For example you would not want your bank balance to be sometimes one number, sometimes another depending on which record happens to be called up by the database.

4. The Class App store has at its heart a simple database. Nonetheless, that database supports some fairly sophisticated functionality. The beauty of the Class App store is that it was created almost entirely without writing code, by using Google Sites and Google Docs. The database consists of two tables—an App table and a Sales table. The App table captures registration information about each app. The Sales table captures sales information—who bought what and when. Conceptually the tables are linked by what is called a one- to-many relationship. One app has many sales. Every database has one-to-many links of this sort. The relationships are formed by the primary key to foreign key correspondence.

5. Once the architecture is established the next step is to get data in and out of the database. Data is entered into a database using forms. For the App table, use the Register App form. For the Sales table, use the Purchase App form. Data is extracted from the database using reports. The listing of apps on the Class App store home page is a report. When the reports involve summary data, we would characterize that as meaningful information. For example, listing the best selling apps and the top rated apps qualifies as information. The number of apps purchased by each student is also information—it reveals how many students have completed the assignment. And there are a variety of reports that can come out of even a simple database such as this. For example, a report

might list the best selling apps for men who are freshmen. One can be quite specific as to the information extracted for analysis.

6. The problem with one table databases is that we are limited to querying the data that happens to be in that table. For example, there is no way to see which developers bought their own apps. The sales data here shows only the buyer not the seller. The seller data is stored in a different table. What we need is a way to join information between the two tables. While joining information between tables is possible to do with a spreadsheet, it is rather difficult and is error prone. The best practice way to accomplish a join is using a database system such as Microsoft Access.

2 Vocabulary activities

2.1 Study the wordlist using a dictionary if necessary and find the words related to business and IT:

A database, a banking transaction, a bank account, a table, an enrollment system, a billing system, a rate plan, a primary key, a foreign key, (to) facilitate, data integrity, (to) open up a possibility, bank balance, (to) duplicate, sophisticated, (to) enter data, (to) extract data, (to) list, a freshman, (to) query data, a spreadsheet, error prone, (to) accomplish.

2.2 Make up common collocations using the text:

a) banking	1) system
b) bank	2) key
c) enrollment	3) integrity
d) billing	4) a possibility
e) rate	5) system
f) primary	6) balance
g) foreign	7) data
h) data	8) transaction
i) (to) open up	9) data
j) bank	10) data
k) (to) enter	11) prone
l) (to) extract	12) plan
m) (to) query	13) account
n) error	14) key

2.3 Match the words to their definitions or synonyms:

a) a data base	1) how much money you have in your account
b) a banking transaction	2) system of payment for phone services
c) a bank account	3) a system of charging money for phone calls
d) a table	4) information viewed as a whole or based on a common principle
e) an enrollment system	5) (to) get the data out
f) billing system	6) (to) get the data in
g) a rate plan	7) a large amount of data stored in the computer system
h) a primary key	8) money movement from one account to another
i) a foreign key	9) a system of taking on school-leavers to a university
j) (to) facilitate	10) a first-year student
k) data integrity	11) a keyword unique for each record
l) (to) open up a possibility	12) an arrangement between a bank and a customer allowing a customer to pay in and take out his money
m) bank balance	13) a column providing a link between 2 tables
n) (to) duplicate	14) a list of numbers arranged across and down a page
o) sophisticated	15) (to) mention things one after the other
p) (to) enter data	16) vulnerable to error
q) (to) extract data	17) (to) achieve or complete
r) (to) list	18) (to) make something possible
s) a freshman	19) a computer program that can show and calculate financial information
t) (to) query data	20) (to) copy something exactly
u) a spreadsheet	21) complicated or complex and difficult for understanding
v) error-prone	22) (to) assist or support
w) (to) accomplish	23) (to) check if the information is true or not

2.4 Finish the sentences using your own ideas:

A. When you list something it's better to do it …
B. When my father was a freshman …
C. If you want to know your bank balance, you should …
D. A university diploma opens up such possibilities as …
E. My mobile phone rate plan includes …
F. He decided to query the data because …
G. The spreadsheet app in Microsoft Office is called …
H. My bank account is called current and I can …
I. The system is rather sophisticated, so …
J. If you need to extract data from a data base …

2.5 Paraphrase the sentences using the vocabulary from the wordlist:

A. I need to access a large amount of data on this computer system.
B. You should always check information from unreliable sources.
C I should check how much money is left in my account.
D. Now you are a first-year student.
E. This material is difficult to understand.
F. This discovery will make cheaper space launches possible.
G. This program makes multiple mistakes.
H. Why did you copy this file exactly?
I. I decided to change my mobile system of payment.

3 Speaking activities

3.1 Search the Internet to find out if there are database types other than relational and report the results of your search to the group in the form of an 8-minute presentation.

Chapter III. Business Informatics for presentations

UNIT 11. The structure and delivery of presentations

1 Reading activities

1.1 How often do you have to make presentations? Do you find it easy or difficult? Why?

1.2 Read the text and match the paragraph headings to the paragraphs:

A. Weak points of PowerPoint presentations.
B. Tips for an effective presentation.
C. PowerPoint is used everywhere.
D. The role and function of presentations.
E. Connecting a report and a presentation.
F. The purpose and the circumstances of a presentation.

1.3 Which paragraph tells us about:

A) a possibility of presenting to the boss?
B) incorrectly made slides?
C) making presentations in sport?
D) relation between presentations and illustrations to a report?
E) making presentations at the college?
F) learning the content of the presentation?

1.4 Put the sentences, summarizing the main idea of each paragraph, in the correct order:

A. Presentations are used in different branches.
B. Your presentation should be strongly connected to your report.
C. Most presentations are bad.
D. Presenting project results is very important.
E. Repeat as often as possible, memorize the content and don't give out the slide copies.
F. You should learn to make presentations while you are a student.

1.5 Answer the questions on the text:

A. Where else, besides business, do they make presentations?

B. What is the goal of most presentations?

C. What should a PowerPoint presentation complement?

D. Why is a presentation on project results so important?

E. How can making a presentation help you with your executive summary?

F. Is it necessary to have an illustration on every slide?

G. What is the meaning of the adage?

H. Why is handing out slide copies pointless?

1.6 Summarize the main ideas of the text using Activity IV as a plan.

Designing Presentations

1. PowerPoint presentations have become the standard method of presenting information in corporate America. This program is not only used in corporations; however, even professional sports teams and the military use PowerPoint to convey information internally.

2. Yet, there are still those who claim that PowerPoint is one of the least effective forms of communication for many reasons:

- Most presenters use slides with words only and yet very few words fit on a slide.

- Presenters tend to cram an entire idea—no matter how complex—onto a single slide.

- Most presentations are thrown together with limited preparation, and the goal of most presentations is to summarize and sell ideas rather than to engage the audience in serious discourse.

- Slides are only displayed one at a time. Therefore, the audience has the difficult task of trying to remember what information appeared on previous slides.

- Presenters tend to read their slides.

- Presenters tend to look at the screen when reading the slides thereby avoiding eye contact with the audience.

3. The result are presentations that are visually bland, intellectually insulting, and easily forgettable. During your college career, you will use PowerPoint for almost every class in which you or a group has to do a presentation. Presentations should explain material clearly and concisely while also prompting the audience to take a certain course of action. A PowerPoint presentation should be a complement to your schematic re-

port. In fact, you should be able to generate the PowerPoint presentation fairly quickly from your schematic report.

4. You need to determine the purpose of the presentation and possible circumstances or contexts in which the presentation might be given. This is a time to showcase your ideas and highlight all of the great things about your project. Be concise and powerful. This may be the most crucial deliverable of the project— especially if given to higher-ups who will have only skimmed the actual report.

5. Think of your presentation as an illustrated version of the executive summary of your schematic report. If you look at it that way, you have already done the work! Each idea from your executive summary should correspond to a slide. Pull ideas out of your executive summary and illustrate them with exhibits from inside the report. Each illustration should be accompanied by a sentence. The sentence can come from the executive summary or from the relevant slide in the report. You may even find that in the process, you end up revising and improving your executive summary. Not every slide needs to be illustrated, and not every illustration needs to be included. A slide with a single sentence and no illustration may actually have great visual impact by contrast with the rest of the report. Furthermore, some of your illustrations may simply set up foundation knowledge or due diligence and need not make it to the presentation.

6. To finish up, create slides that bookend your presentation with an agenda up front and a summary at the end. Follow the old adage, tell them what you are going to tell them, then tell them, then tell them what you told them. Here are some additional tips:

- Master the content. 90% of the words that come out of your mouth will not be on the slide. You want the audience to look at you not the slide. Furthermore, if you know your content, you can look at the audience. If necessary, have note cards that you could refer to in an emergency.

- Try to avoid handing out miniatures of your slides. Slides created using the method above will be virtually meaningless without the presenter. Hand out the schematic report or even just the executive summary instead.

2 Vocabulary activities

2.1 Study the wordlist using a dictionary if necessary and find the words related to business:

(to) convey information, a form of communication, (to) cram an idea, (to) throw together a presentation, (to) fit, (to) sell an idea, (to) display a slide, (to) avoid eye contact, (to) tend, bland, concise, (to) prompt, a course of action, schematic, circumstances, (to) highlight, an exhibit, an executive summary, higher-ups, (to) revise, (to) have an impact on, (to) set up a foundation, (to) bookend, an agenda, a tip, (to) master, an emergency, (to) hand out

2.2 Make up common collocations using the text:

a) (to) convey	1) a presentation
b) a form	2) an idea
c) (to) cram	3) of action
d) (to) throw together	4) eye contact
e) (to) sell	5) of communication
f) (to) display	6) summary
g) (to) avoid	7) an impact on
h) a course	8) information
i) an executive	9) an idea
j) (to) have	10) a foundation
k) (to) set up	11) a slide

2.3 Match the words to their definitions or synonyms:

a) (to) convey information	1) (to) match or correspond
b) a form of communication	2) (to) demonstrate a slide
c) (to) cram an idea	3) tasteless or not interesting
d) (to) throw together a presentation	4) a direction or plan of what to do
e) (to) fit	5) shortened and simplified
f) (to) sell an idea	6) a situation
g) (to) display a slide	7) (to) prepare a presentation fast and carelessly
h) (to) avoid eye contact	8) (to) attract special attention to
i) (to) tend	9) a report of what has been done on the project
j) bland	10) (to) review and to change

k) concise	11) bosses
l) (to) prompt	12) (to) deliver information
m) a course of action	13) (to) have a tendency, (to) be prone to
n) schematic	14) (to) influence or to affect
o) circumstances	15) (to) express an idea in a very concise form
p) (to) highlight	16) a piece of advice
q) an exhibit	17) (to) prepare the basics of something
r) an executive summary	18) (to) try not to look somebody in the eye
s) higher-ups	19) (to) have full control of
t) (to) revise	20) a plan
u) to have an impact on	21) a means of communication
v) (to) set up a foundation	22) short
w) (to) bookend	23) (to) distribute
x) an agenda	24) (to) present an idea in a very attractive way
y) a tip	25) a sample or an example
z) (to) master	26) (to) support from both ends
aa) an emergency	27) (to) tell somebody what they do not know
bb) (to) hand out	28) a critical situation

2.4 Finish the sentences using your own ideas:

A. In an emergency you should …
B. The main forms of communication are …
C. The person who has had an impact on me is …
D. Before the exam you should revise …
E. If you prompt in an exam …
F. The teacher handed out our tests and …
G. If a girl avoids eye contact with a boy …
H. The food tasted bland and …
I. The best way to convey information is …
J. If you want to master English …
K. In a crisis I tend to …

2.5 Paraphrase the sentences using the vocabulary from the wordlist:

A. The plan of the meeting included 5 items.
B. He prepared a shortened version of the report on how the work was going on.
C. He distributed the papers among the participants.
D. In such a situation the best solution is to let it go.
E. She didn't look me in the eye.
F. He tried to present the idea in a very shortened way, but it didn't help.
G. My best piece of advice here is to work harder.
H. I would like to attract your attention to the following points.
I. This food is tasteless.
J. This film had a great influence on him.
K. He wanted to present the idea in the most attractive way.
L. This jacket is not my size.
M. She has a tendency to oversimplify things.
N. He wanted to tell me the answer in the exam, but he failed.

3 Speaking activities

3.1 Using the guidelines from the text, prepare a short presentation (8-10 minutes) on your future plans. Present it in front of the group.

UNIT 12. Slide design

1 Reading activities

1.1 Are you familiar with any rules of making slides? Can you remember any examples of simple and effective slides?

1.2 Read the text and match the paragraph headings to the paragraphs:

A. Slides with a full-page bleed.
B. Using CRAP principles for slides.
C. Signal to noise ratio.
D. Choosing a proper background.

E. The rule of thirds.
F. Presentation Zen slides.

2.3 Which paragraph tells us about:

A. how much multimedia we should use?
B. the use of white space?
C. slides overloaded with text?
D. the picture superiority effect?
E. ensuring consistency among slides?
F. power points?

2.4 Put the sentences, summarizing the main idea of each paragraph, in the correct order:

A. How to find a place on a slide for maximum visual effect.
B. Avoiding boring slides.
C. Adding dimensionality by putting the text on top of the slide.
D. The supporting role of slides in a presentation.
E. Minimizing the number of words in a slide.
F. The balance of signal and noise.

2.5 Answer the questions on the text:

A. What is wrong with text-heavy slides?
B. What can spice up your presentation?
C. What 3 principles does Garr Reynolds support?
D. How can we make picture a part of presentation's communication signal?
E. What creates the maximum visual impact?
F. What is the easiest way to create dimensionality on a slide?

2.6 Summarize the main ideas of the text using Activity IV as a plan.

Designing Presentations (2). Slide Design

1. PowerPoint comes with many different themes to apply to your slides. In general, try to choose either a very light or a very dark colored background. Anything in between will wash out in a bright room. Themes cannot save a text-heavy slide. It is still a boring slide and the speaker may feel obligated to read it to the audience. Many students turn to a dark background theme with the hope that it will convey more professionalism. However, as you can see, it doesn't solve the problem of a boring slide.

2. A better option is to move most of the words to your schematic report and instead make your point in a dramatic visual fashion. Visual slides take much longer to create but could differentiate your presentation from every other boring PowerPoint presentation making yours more persuasive. You want your presentation to be professional and engaging. To get there you will need the C.R.A.P. principles (Contrast, repetition, Alignment, Proximity). You will also need stylistic enhancements that come under the heading of Presentation Zen. Finally a little (and we do mean *little*) multimedia—embedded video or subtle use of animation serves to spice up a presentation. The C.R.A.P. graphic design principles apply to slide design as well. Contrast, repetition, alignment, and proximity help organize information on your slide, focus attention, and create an overall professional look and feel.

3. Highly visual presentations with very few words are popularized by Garr Reynolds in his book, *Presentation Zen*. Reynolds advocates restraint, simplicity, and naturalness. The idea is that the slides naturally support your presentation rather than serving as a narrative. You are supposed to know your material. Presentation Zen slides are characterized by very large illustrations—often full page bleeds—and usually just one sentence of text. This is called the picture superiority effect—basically that pictures are more memorable than words. Three other Presentation Zen principles are to aim for a high signal to noise ratio, make good use of empty space, and align images using the rule of thirds. Every item on your slide should be there for a reason. You are trying to inform the reader and transfer information. You should not aim to decorate your slide with meaningless fluff.

4. In technical terms you want a strong communication signal and very weak distracting noise in your slide. This is called a high signal to noise ratio. Normally, words, numbers, and graphs are your communications signal—the information you are trying to convey. Pictures can also be part of that signal if they are used reasonably—otherwise they become part of the noise. Resist the temptation to fill every available space on your slide with words or images. White space is good! White space is pleasing to the eye and can represent balance and harmony. However, too much white space might convey that you don’t have very much to say about a particular topic, or that it is not important. Again, it’s all about balance.

5. One of the advantages of using a full page bleed is that the picture is often larger than the slide. This gives you the option of positioning and

cropping the picture for maximum visual impact. For many years professional photographers have used the rule of thirds to compose a picture, and you can too. Simply divide the slide horizontally and vertically in thirds using the guides. The place where the lines meet are called "power points." Try to place your subject whether words or images at the power points for maximum visual impact.

6. The problem with a full page bleed is that the text may be unreadable on top of the image depending on the image. One easy solution is to place the text on top of a fill. The fill may be solid (opaque) or semi-transparent if you would like the picture to show through. In either case, the fill allows you to add dimensionality to your document in much the same way that magazines layer text and graphics on their covers. The easiest way to create this effect is to create a layout on the master slide. Reposition the title so that it completely covers a strip at the top or bottom of the slide. Then right-click and format the text box adding a fill and adjusting the text color as necessary. To ensure consistency among slides, turn OFF the auto fit text. Instead simply set the font size to 24 point. On individual slides you may have to arrange layers so that the text box sits on top rather than below the graphic.

2 Vocabulary activities

2.1 Study the wordlist using a dictionary if necessary and find the words related to computer design:

A background, (to) wash out, (to) feel obliged, (to) make a point, persuasive, alignment, proximity, embedded, subtle use, (to) spice up a presentation, restraint, a superiority effect, a full page bleed, signal-to-noise ratio, (to) resist the temptation, pleasing to the eye, (to) crop, a power point, opaque, semi-transparent, dimensionality, a layout, a strip, (to) adjust, consistency.

2.2 Make up common collocations using the text:

a) (to) feel	1) use
b) (to) make	2) effect
c) subtle	3) bleed
d) (to) spice up	4) a point
e) a superiority	5) point
f) a full-page	6) the temptation
g) signal-to-noise	7) to the eye

h) (to) resist	8) obliged
i) pleasing	9) ratio
j) a power	10) a presentation

2.3 Match the words to their definitions or synonyms:

a) a background	1) the state of being arranged in a line or parallel to something
b) (to) wash out	2) positioned inside something
c) (to) feel obliged	3) a position close to something
d) (to) make a point	4) the state of being reserved or holding to limitations
e) persuasive	5) correlation between relevant and irrelevant information
f) alignment	6) convincing
g) proximity	7) a page covered in some color background
h) embedded	8) (to) cut a part off a photo or a picture to make it proper size
i) subtle use	9) (to) be difficult to see
j) (to) spice up a presentation	10) difficult to see through
k) restraint	11) pleasant to look at
l) a superiority effect	12) easy to see through
m) a full-page bleed	13) (to) make your presentation more vivid
n) signal-to-noise ratio	14) a way of arranging things
o) (to) resist the temptation	15) when you use something to measure
p) pleasing to the eye	16) a band
q) (to) crop	17) the quality of being the same in changing contexts
r) a power point	18) the area behind the main thing you are looking at
s) opaque	19) (to) adapt
t) semi-transparent	20) a measure of spatial extent, especially width, length or height
u) dimensionality	21) (to) express an idea or an opinion
v) a layout	22) an important place or location
w) a strip	23) (to) disagree to do something that looks attractive

x) (to) adjust	24) an effect when something dominates or prevails over something else
y) consistency	25) (to) feel that you have to

2.4 Finish the sentences using your own ideas:

A. I always resist the temptation to go and buy …
B. The thing I find always pleasing to the eye is …
C. My favourite colour of background is …
D. Before you start a car you need to adjust …
E. I always feel restraint to tell people …
F. The house has opaque windows because …
G. To spice up a presentation you should …
H. We need to crop this picture…
I. A subtle use of multimedia makes your presentation …
J. The sign on the T-shirt washed out …
K. I decided to change the layout of …

2.5 Paraphrase the sentences using the vocabulary from the wordlist:

A. I feel that I have to ask her out.
B. The shop is near the service center.
C. They wanted me to express my idea.
D. The whole page was red.
E. I could hardly see through the glass.
F. He used multimedia to measure.
G. She looked good in the picture against the sea.
H. All the cars were standing on one line.
I. His version of the film has subtitles already included.
J. We had to cut the picture to fit it in the layout.
K. This presentation has too much irrelevant information.

3 Speaking activities

3.1 Search the Internet to find the information about Presentation Zen principles. Prepare a short report and present it in front of the group.

CHAPTER IV. BUSINESS INFORMATICS FOR RECRUITMENT

UNIT 13. Writing a cover letter

1 Reading activities

1.1 Have you ever applied for a job? If yes, then what documents did you need to prepare?

1.2 Read the text and match the paragraph headings to the paragraphs:

A. Why you need a cover letter.
B. Why a resume and cover letter format is important.
C. Why a cover letter is more convenient for telling a potential employer about yourself.
D. When we need a cover letter and a resume.
E. Requirements for cover letters.
F. Two types of cover letters.

1.3 Which paragraph tells us about:

A) when a letter of inquiry is written?
B) applying for a business loan?
C) how long it takes employers to look through a resume?
D) the need to remind a potential employer about previous contact?
E) whom we should address a cover letter?
F) what kind of information you should emphasize in a cover letter?

1.4 Put the sentences, summarizing the main idea of each paragraph, in the correct order:

A. The importance of a cover letter structure.
B. Show yourself to advantage in a cover letter.
C. The purpose of a cover letter.
D. The situations in which a cover letter is required.
E. A cover letter preparation.
F. Letters of inquiry and letters of application.

1.5 Answer the questions on the text:

A. What are the two situations in which you might need a resume and a cover letter?
B. What can spoil even the most impressive career achievements?
C. What should you do if your cover letter is a follow-up?
D. What information should you include in both types of cover letters?
E. What is the main advantage of a cover letter over a resume?
F. Whom should cover letters be addressed to?

1.6 Summarize the main ideas of the text using Activity IV as a plan.

BI for Recruitment (1)

1. There are at least two situations in which you will need to provide a cover letter and resume. One is when applying for a job. However, when you apply for a business loan you may also be asked for a resume. After all the bank wants to gauge whether or not you have the experience and talent to make the business a success.

2. Your job is to summarize, highlight, and organize your experiences and skills so that it is easy for an employer or loan officer to see what you have to offer. There are guidelines available to help you format your resume and cover letter in an organized and effective manner. Even the most impressive professional experiences can come across poorly if they are displayed on an unorganized resume. Initially, employers spend an average of less than one minute looking over a resume, so you need to sell yourself well by having a resume that stands apart from the rest. A resume is your first impression to a potential employer. During a job search, it is the most important tool you can use to get your foot in the door for an interview with a desired employer.

3. When sending a resume to an employer, it is often appropriate to include a cover letter. The purpose of a cover letter is to introduce yourself, explain your reason for contacting the employer, and to sell yourself as a desirable candidate for employment. A cover letter may be your first contact to an employer, or it could be a follow up from a previous meeting. If it is a follow up, remind the employer about your interaction to help him or her recall the original meeting.

4. A cover letter should explain your reason for contacting an employer. There are two types of cover letters: letters of inquiry and letters

of application. A letter of inquiry is written when you want more information regarding potential job openings. A letter of application is written when you know specifically which position you would like to obtain and to inform an employer of your qualifications for employment. In both types of letters, you should include information that you already know about the employer and/or position and why you are interested in working for the company. This shows your interest and demonstrates that you have taken the time to research the company.

5. A cover letter should be used to sell yourself more effectively to a potential employer. In a resume, you have limited space to outline yourself and your experiences. In a cover letter, you have much more space to highlight your skills and what you can contribute to the company. You can use the letter to expand upon your best qualities or most important experiences or achievements. You can also emphasize information that di-rectly relates to the position for which you are applying, furthering your chances for consideration. It also allows you to demonstrate your written communication skills.

6. Cover letters should be personalized and should be prepared individually with each job application. They should be addressed to a specific person, not just a company or department. You can find employee addresses in directories on the company website or through a personal inquiry. CareerSearch® is a web-based employer research system, and the VAULT Online Career Library are two other ways to research companies and find contact information. Cover letters should be no more than one page long and should be produced on the same paper as your resume and reference sheet. Also, be sure to double-check grammar and spelling to avoid unprofessional errors, and use an organized and neat letter format.

2 Vocabulary activities

2.1 Study the wordlist using a dictionary if necessary and find the words related to HR-management:

A cover letter, (to) apply for a job, (to) apply for a loan, (to) highlight, (to) come across, (to) stand apart, a job search, (to) obtain a position, (to) get one's foot in the door, a follow-up, a letter of inquiry, a letter of application, a job opening, (to) contribute, (to) expand on/upon something, (to) further, communication skills, a directory, a reference sheet, neat.

2.2 Make up common collocations using the text:

a) a cover	1) a loan
b) (to) apply for	2) a position
c) (to) apply for	3) skills
d) a job	4) of inquiry
e) (to) obtain	5) opening
f) (to) get one's foot	6) sheet
g) a letter	7) a job
h) a letter	8) search
i) a job	9) letter
j) communication	10) of application
k) a reference	11) in the door

2.3 Match the words to their definitions or synonyms:

a) a cover letter	1) knowing how to talk to people
b) (to) apply for a job	2) (to) get a job
c) C. (to) apply for a loan	3) a process of looking for a job
d) (to) highlight	4) tidy and pleasant to look at
e) (to) come across	5) the next contact
f) (to) stand apart	6) (to) stress, (to) emphasize
g) a job search	7) a letter asking if a company has a job for you
h) (to) obtain a position	8) a vacancy
i) (to) get one's foot in the door	9) (to) add something useful
j) a follow-up	10) (to) say or write in detail
k) a letter of inquiry	11) 11. (to) promote or help
l) a letter of application	12) (to) achieve a recipient
m) a job opening	13) a list of people who could provide recommendations
n) (to) contribute	14) a business letter, accompanying a resume
o) (to) expand on/upon something	15) (to) look different
p) (to) further	16) (to) ask a bank if they will lend you money

q) communication skills	17) a letter asking to give you a particular job
r) a directory	18) (to) ask an employer if he will hire you
s) a reference sheet	19) a list arranged in alphabetical order
t) neat	20) (to) get an opportunity with a company

2.4 Finish the sentences using your own ideas:

A. If you have good communication skills …
B. A telephone directory has information …
C. His neat handwriting shows …
D. You can contribute to the reputation of the university …
E. In a letter of application you should mention …
F. I am ready to expand upon such topics as …
G. Some students stand apart from others because …
H. People usually apply for a loan if …
I. To get his idea across the speaker used …

2.5 Paraphrase the sentences using the vocabulary from the wordlist:

A. He asked the company to give him the job.
B. Ye can talk to all kinds of people.
C. I asked the bank to lend me some money.
D. I wrote a letter to a company asking if they have a job for me.
E. I looked up the list of telephone numbers to find the number of the water supply company.
F. The typed document was pleasant to look at.
G. He looks different from his peers.
H. I would like to help this process move faster.
J. I saw a vacancy on the company website.

3 Writing activities

3.1 Study the websites of international companies to find vacancies and try to write a letter of application for one of them. Use the tips given in the text.

UNIT 14. Writing a resume

1 Reading activities

1.1 Do you know how to write a resume? Do you have a resume in Russian?

1.2 Read the text and decide which paragraph tells us about:

A. The purpose of a resume?
B. Preparing to write a resume?
C. Mentioning your interests?
D. Telling the employer about your studies?
E. Naming the subjects you studied?
F. Writing about the places where you worked?
J. Adapting your resume for different jobs?
K. Mentioning your name and address?

1.3 Mark the following statements as either true (T) or false (F):

A. You should first prepare a resume and then add information about what you can do. (T/F)
B. You will have to change your resume as your career develops. (T/F)
C. One resume will do for different jobs you apply for. (T/F)
D. It is not necessary to mention the purpose of your resume in your resume. (T/F)
E. The places where you studied and worked should be mentioned in chronological order. (T/F)
F. You need to mention your duties when you write about previous places of work. (T/F)
J. You mustn't mention your sporting achievements. (T/F)

1.4 Answer the questions on the text:

A. What should you do before writing a resume?
B. In what way should you adjust your resume for specific jobs?
C. Where should you put your contact information?
D. How should you formulate your objective?
E. When should you mention your GPA?
F. What should you mention for each job you had?
J. What courses should you list?

1.5 Summarize the main ideas of the text using paragraph headings as a plan.

BI for Recruitment(2)

Creating a Resume

A resume is an employer's first impression of a potential employee. Before you start creating a resume, you will need to gather information concerning your skills and experiences and decide on a career goal.

Content

As you gain career experiences, you will need to update your resume. You may also want to adjust your resume for specific positions for which you are applying to include your knowledge and skills pertaining to that particular job. Though each copy of your resume that you hand out may differ slightly, most resumes need to have the same basic content.

Contact Information

A resume should contain your personal contact information so an employer can reach you for an interview. It should be displayed prominently toward the top of your resume and should include your name, address, phone number, a personal website (if you have one) and an e-mail address. Be sure that you use a professional e-mail address.

Objective

Including an objective on a resume is optional. If you decide not to include an objective, be sure to state this information in your cover letter. An objective should be clear, concise, and should state what you can do for an organization rather than what it can do for you. It should also be updated for each position or employer.

Education

In this section, list all academic information in reverse chronological order with the most recent listed first, including each school you have attended, graduation or expected graduation date, degree(s) earned and major(s), and your Grade Point Average (if it is over a 3.0).

Work Experiences

Work experience should also be listed in reverse chronological order and can include any volunteer positions, internships, co-ops, field or practicum experiences, and major projects. For each listing, include the employer name and location, position title, dates of employment, and at least two points explaining your responsibilities.

Relevant Courses

You may list courses that apply directly to your career goals, but list the full course title rather than the abbreviation.

Activities/Associations

This section should include your extracurricular activities and interests. List any professional organizations, student organizations, athletic teams, or other clubs to which you belong. You may also include any honors or awards you have received or any professional workshops you have attended.

2 Vocabulary activities

2.1 Study the wordlist using a dictionary if necessary and find the words related to HR-management:

A career goal, (to) gain experience, (to) update one's resume, (to) pertain to, (to) display prominently, (to) contain, optional, (to) list in chronological order, (to) earn a degree, Grade Point Average, work experience, dates of employment, extracurricular activities, (to) receive an award, (to) attend a workshop.

2.2 Make up common collocations using the text:

a) a career	1) one's resume
b) (to) gain	2) experience
c) (to) update	3) a degree
d) (to) display	4) Average
e) (to) list 1	5) activities
f) (to) earn	6) experience
g) Grade Point	7) prominently
h) work	8) a workshop
i) dates	9) goal
j) extracurricular	10) an award
k) (to) receive	11) of employment
l) (to) attend	12) in chronological order

2.3 Match the words to their definitions or synonyms:

a) a career goal	1) practical knowledge you have received from your employment
b) (to) gain experience	2) (to) be related to

c) (to) update one's resume	3) not obligatory or mandatory
d) (to) pertain to	4) (to) include
e) (to) display prominently	5) (to) get a certificate proving your qualification
f) (to) contain	6) periods of time spent in a job
g) optional	7) the purpose of your work
h) (to) list in chronological order	8) (to) include recent changes in your resume
i) (to) earn a degree	9) additional courses which are not a part of one's educational program
j) Grade Point Average	10) (to) get a prize
k) work experience	11) (to) get practical knowledge from your work
l) dates of employment	12) (to) go to a practical seminar
m) extracurricular activities 9	13) (to) put something so that it is easy to notice
n) (to) receive an award	14) the average of a student's marks over a period of time
o) (to) attend a workshop	15) (to) mention in the order corresponding to the letters of the alphabet

2.4 Finish the sentences using your own ideas:

A. His GPA was lower than 3.0, so …
B. If you do not have any work experience …
C. You should know your career goal to …
D. Students can gain work experience by …
E. Our university provides such extracurricular activities as …
F. If you want to earn a Master's degree …
G. He was a prominent sportsman and received a lot of awards …
H. This subject is optional so …
I. His test contained a lot of errors, so …
J. This subject pertains to your future job and …

2.5 Paraphrase the sentences using the vocabulary from the wordlist:

A. He got a prize for good performance.
B. We have to go to this practical seminar.
C. This task is related to your course paper.
D. If you work during your vacations, you will get practical knowledge.
E. This task is not mandatory.
F. The purpose of my work is to have my own company.
G. This information should be easy to notice.
H. His report included a lot of examples.
I. The items were mentioned from A through Z.

3 Speaking activities

3.1 Using tips from the text, prepare your own resume. Try to fit it in one page.

UNIT 15. The interview

1 Reading activities

1.1 Have you ever been interviewed for a job? If you have, what did it feel like?

1.2 Read the text and decide which paragraph tells us about:

A. giving specific examples of past experiences?
B. candidates' ability to know beforehand what questions they might be asked?
C. how to answer PAR questions?
D. when candidates are asked about their strengths and weaknesses?
E. getting ready for an interview?
F. a candidate's ability to resolve conflicts?
G. possible misunderstanding an interviewee's question?

1.3 Mark the following statements as either true (T) or false (F):

A. Most companies these days are still practicing traditional interviews. (T/F)

B. In traditional interviews candidates can be asked to tell the interviewees about their life. (T/F)

C. In behavioral interview the focus is on a candidate's character in general. (T/F)

D. Behavioral questions can be mixed with traditional ones. (T/F)

E. Candidates are not expected to be creative. (T/F)

F. There is no need to prepare for a traditional interview. (T/F)

G. Reading the job description can be really helpful. (T/F)

H. You can be asked to describe some concrete tasks and assignments.

1.4 Answer the questions on the text:

A. Why do many companies nowadays use behavioral interviews?

B. What kind of questions are candidates asked in a traditional interview?

C. What are behavioral questions based on?

D. How are behavioral questions usually placed?

E. What kind of preparation do you need to make before an interview?

F. How can you guess some of possible questions?

G. What should you ensure before answering a behavioral question?

H. Why is it a good idea to mention the problems you solved?

1.5 Summarize the main ideas of the text using paragraph headings as a plan.

BI for Recruitment (3)

Interviewing Guidelines

Most people are familiar with traditional interviews and can anticipate what type of questions they will be asked in the interview process. Many companies are now using behavioral interview questions in order to discover an applicant's skills and capabilities.

Traditional Interviews

In a traditional interview, applicants are asked about themselves and their experiences found on their resume. Possible questions include:

- "Please tell me a little about yourself."
- "What are your strengths and weaknesses?"
- "Why do you think you are the best candidate for this position?"

Behavioral Interviews

In a behavioral interview, the skills and characteristics desired for the chosen employee have already been decided, and the questions that will be asked will be based on those qualifications and will require interviewees to give specific examples of past experiences and how they have handled those situations. This helps the employer see how candidates are likely to perform in similar situations likely to occur in the new position. These questions may be interspersed in conversation or they may be in a set list of questions to be answered. An example question may be, "Describe a difficult problem that you tried to solve. How did you identify the problem and solve it?"

What Employees Look for During an Interview

Employers most commonly look for the following skill sets during an interview:

- Problem solving
- Leadership and teamwork
- Dealing with ambiguity and conflict
- Listening and communication skills
- Showing creativity, assertiveness, and decisiveness
- Demonstrating initiative, and determination

How to Prepare for an Interview

Before an interview, you can prepare by planning to answer possible questions that may be asked. Since no two interviews are alike, it is wise to prepare for both behavioral and traditional interview questions. By reading the position's description, you can often get a sense of what types of questions will be asked and which of your skills you should be prepared to discuss. Also, be sure to review your resume before an interview to remind yourself of experiences you can talk about with the employer.

Answering Behavior-Based Questions

Employers who ask behavior-based questions want interviewees to describe specific projects, situations, or experiences that can apply to the open position. Before answering a behavior-based question, make sure you understand the question and do not be afraid to ask for clarification if something is vague or unclear. In each response, the interviewer is looking for three main things:

- **P**roblem or situation — describe the context of the situation
- **A**ction — explain what you did
- **R**esult — show the outcome or solution

PAR Examples

By including a problem or situation description, your actions, and a solution in your answer, you can respond to interview questions on **PAR**. Your responses will help the interviewer understand how you be- haved in a certain scenario and determine if you would be a good fit for the open position.

2 Vocabulary activities

2.1 Study the wordlist using a dictionary if necessary and find the words related to HR-management:

To be familiar with, (to) anticipate, an applicant, strengths and weaknesses, (to) handle a situation, (to) be likely to, (to) be interspersed, a skill, (to) deal with ambiguity, assertiveness, determination, wise, a position's description, (to) get a sense of, (to) review, (to) make sure, (to) ask for clarification, vague, (to) respond to a question, (to) be a fit for.

2.2 Make up common collocations using the text:

a) strengths	1) description
b) (to) handle	2) a sense of
c) (to) deal	3) clarification
d) a position's	4) with ambiguity
e) (to) get	5) a question
f) (to) make	6) and weaknesses
g) (to) ask for	7) sure
h) (to) respond to	8) a situation

2.4 Match the words to their definitions or synonyms:

a) (to) be familiar with	1) (to) be able to control a situation
b) (to) anticipate	2) (to) be able to work in an unclear situation
c) an applicant	3) confident behavior
d) strengths and weaknesses	4) clever due to life experience
e) (to) handle a situation	(to) be mixed up with
f) (to) be likely to	5) what are your duties in this job
g) (to) be interspersed	6) (to) be able to feel
h) a skill	7) (to) know something well
i) (to) deal with ambiguity	8) (to) guarantee

j) assertiveness	9) advantages and disadvantages
k) determination	10) a trained ability
l) wise 4	11) unclear
m) a position's description	12) (to) know about something before it happens
n) (to) get a sense of	13) (to) ask to explain
o) (to) review	14) (to) answer a question
p) (to) make sure	15) (to) be suitable for
q) (to) ask for clarification	16) a candidate
r) vague	17) trying to do something even when it's difficult
s) (to) respond to a question	18) (to) look through once again so as to remember
t) (to) be a fit for	19) there is a high probability for it to happen

2.5 Finish the sentences using your own ideas:

A. I am familiar with programming so …
B. To get the sense of the situation you need to …
C. A candidate reviewed his resume to …
D. My grandfather was wise and …
E. The teacher could anticipate what students will do …
F. If we want to succeed, we need to make sure …
G. His explanation was vague and …
H. I asked for clarification because …
I. They told me I was not fit for the job because …
J. My most valuable skill is …
K. They asked me about my strengths and weaknesses and …
L. His assertiveness makes him …
M. To handle such a difficult situation you have to …

2.5 Paraphrase the sentences using the vocabulary from the wordlist:

A. He will go forward even if there are few chances for success.
B. I know this area quite well.
C. I told them about what was good and bad about me.
D. I answered the question at once.
E. His story was unclear and we asked him to explain it.

F. He looked through the papers once again.
G. His long life made him clever.
H. I read about my duties in this job.
I. Can you work when the outcome is not clear?
J. Serious questions were mixed with stupid ones.
K. There is high probability for a rain.
L. His behavior was very confident.
M. The candidate knew the procedure well.

3 Speaking activities

3.1 Work with your partner and act out a job interview for a position of a junior system analyst, where one of you is a candidate and the other – an interviewee, then exchange the roles. Make sure you ask both traditional and behavioral questions. Some examples of questions are in the text.

ADDITIONAL TEXTS FOR READING

Database Integration

Even a simple store must collect and display data from a database. We collect data about each app—what it is called, its description, and the link to the student page. We also collect data about each sale—who purchased what and when.

Every time you register on a website, your registration information is stored in a database. Similarly, when you make an online purchase the information is stored in a database. If you play online games, your scores are stored in a database. Websites constantly capture customer data in order to improve their services.

A database is a collection of one or more related tables of data stored in rows and columns. By this definition even a spreadsheet is a simple database. However, many business databases consist of multiple files that are interrelated. Databases may be searched, sorted, and summarized to display information. Most businesses would not function without databases of information. For example, imagine a bank trying to function without its database of customer and account information.

Information is usually entered into a database using a form. Each form normally corresponds to a single record or row in the database. Each field in the form normally corresponds to a single column or cell in that record. The form helps ensure that correct information is entered. Drop down menus in particular help ensure that users do not type in gibberish.

Just a short time ago, only professional programmers could save website information to a database. There are now tools that make this functionality easily accessible. The simplest example of database integration is to save information to a one table database. The simplest one table database is a spreadsheet.

Information is extracted from databases in the form of reports. The simplest report is a listing of all the records in the database. However, most reports summarize the information in a way that is helpful to business managers so that they can make data driven decisions. For example, a report might show total sales by product allowing managers to adjust inventory to meet demand.

One very interesting use of database information is to create custom web pages. For example, imagine you have purchased multiple items

from Amazon.com. Amazon keeps track of your purchases and those of millions of other customers. By looking for patterns of buying behavior in its database, Amazon is able to suggest products you might like based on the buying behavior of customers who match your purchase profile.

Save Website Data to a File

While the site registration and sale forms are created by the professor, we would like you to have some experience with data integration. Therefore, you will make a form whereby users can register with your site to receive product update information even without making a purchase.

Because the form includes the customer's email address, the information is a valuable resource for future mass mailings. If used judiciously, such mass mailings are appreciated by customers; if overused they are considered spam. Google Docs lets you create a form to accept customer information and then stores the information in a spreadsheet. In other words, when you create a form, you get both a form and a spreadsheet automatically.

Start Google Docs> then choose *Create New > Form*

Complete the form. After completing each field you need to click *Done*. The first two fields are already on the form. To get the third field, check *Add item*. Then save the form. Add the form to your web page from the same menu that you use to insert gadgets, calendars, and so forth. Then exit *Edit mode* and practice filling in the form. Return to *Google Docs*. You will see a spreadsheet listed with the same name as your form. *Open the spreadsheet* to view the captured data.

Digital safety distinguished from online security

We propose a clear distinction between the concepts of *digital safety* and *online security*. We think of digital safety as a principle that protects users from harm which may be caused by increasingly semi-autonomous systems that are amalgamations of services from various developers. An example of this could be the employment of "fail-over" (or perhaps "fail-safe") solutions in case part of the system is dysfunctional. In our model, fail-over systems are not designed to defend from any breach. Instead, they are designed to assume that there may be a breach, and the fail-over kicks in to provide a solution.

By contrast, online security is the work that is put into protecting the system against malicious actors, rather than the ways that the systems act to protect users when there is a problem. Because fail-over is not a defense in and of itself, good security to prevent the need for failover is also important. This is a crucial contrast to "traditional" security-development practices, which are more tolerant towards system errors given that the consequence is "only" virtual or informational (e.g., "Alert! There has been a security breach!") rather than protecting users from material and physical harm. Looking at this another way, we propose the following taxonomy to distinguish *safety* from *security:*

- ***digital safety*** is the protection of the user in his or her environment, with technical mechanisms and policies that protect the users from being harmed by improper operation of the device;

- ***online security*** is the protection of the *physical network, operating systems* and *content* from exposure, modification or functional damage, utilizing a combination of software and hardware mechanisms.

In the above taxonomy, both categories could include pre-emptive as well as fail-over action. A garage door opener offers an example in which safety is paramount. Normally, the garage door can be opened with a signal from a smartphone or a radio-based key device. If this fails for some reason, it is important – for safety – that the door can be opened manually by releasing it from the motorized control. This is usually accomplished with a physical release mechanism. Usually this mechanism is only accessible from inside the garage. The failure of the controls does not trap the user but, at the same time, the system is secure in that the door does not open from the outside. The user is safe, the garage is secure.

One can imagine other intelligent devices such as thermostats that can be controlled and monitored remotely.

For safety, it should not be possible to allow the temperature to be set above some maximum level. The same standard might also apply for a water heater. Even if a command is sent to try to exceed limits, a fail-safe design would inhibit exceeding fixed limits. For security, it should not be possible—or at least, easy—for an unauthorized party to control or monitor the thermostat. One might use two-factor authentication to achieve the security objective.

In short, digital safety focuses on the end user and his or her interests and health, while online security focuses on protecting other aspects of the network or the device itself. Of course, for some device failures, there could be an effect that might cause a safety issue for the user, for example

an unauthorized intruder operating a device in a way that causes it to catch fire. Various security challenges are taken to a new level in the context of IoT because of the increased possibility of penetrators to access the actual equipment used to sense, actuate and control it. While these devices are online, and might be penetrated through that path (e.g. local radio, local network), direct access is an additional hazard.

Additionally, the software might be altered to do everything it is supposed to do for device operation and then generate spam, denial of service attacks or other harmful attacks. The user would not be aware of the problem if the device operation did not show any signs of tampering. With regard to safety, the real concern is that these highly complex IoT ensembles (consisting of hardware, software, and firmware) may have bugs. Alternatively, a bug-free system could still generate unforeseen constellations and outcomes in such a way as to interfere with safe operation.

MBI Model Application and Future Development

There exist two alternatives of a MBI model application in practice.

Firstly, IT executives can utilize the model to create a comprehensive system of business informatics management based on best practices in IT management. This way the MBI model helps to describe all tasks, roles and their responsibilities, and other objects included within IT management. MBI then becomes a company regulation that determines who, when and how solves various IT issues in an organization.

Secondly, the MBI model offers IT executives a solution to issues occurring at strategic, tactical and oper tional level. The model includes template solutions to current issues that can be found through a MBI navigation mechanism based on “doors”, or by searching for a specific scenario.

Example 1: A user needs to create an information strategy for his organization. If the user is only interested in the structure of an information strategy document, he locates the relevant document in the MBI system and uses it directly. If the user needs to know the entire process of strategic management, he uses these two task groups: “Strategic Analysis of Business Informatics” and “Strategic Proposal for Business Informatics”.

Example 2: A user needs to prepare SLA for new IT services. Using the MBI navigation mechanism the user locates the task “Preparation and

Approving of SLAs", follows the task recommendations and applies SLA templates stored in the MBI system for inspiration.

Example 3: A user identifies a problem in enterprise applications performance, i.e. applications have poor availability and slow response time. Using the MBI navigation mechanism the user identifies tasks that impact enterprise applications performance, in this case the task "Ensuring Operational Performance and Scalability of IT Services".

The authors expect the second alternative of model application to be primarily used by IT practitioners in SMEs, and the combination of both alternatives then in large enterprises. The content of the MBI model is still under development and currently contains data gained from various consulting assignments and derived from literature on this topic.

To ensure the implementation of a comprehensive system of business informatics management brings the desired effect (i.e. IT/ business alignment, competitiveness increase, etc.), the MBI implementation must be well managed and controlled. The MBI authors thus recommend the following implementation steps:

1. Defining the MBI implementation objectives of an organization and determining the metrics for their measurement (senior management). Definition of the objectives will vary depending on the current business

situation and anticipated role of business informatics over the next two to three years.

2. Establishing the MBI implementation team. The team should have at least three members. The team leader has to be the CIO or another IT executive whose responsibility includes business informatics management. This executive needs to possess necessary competencies, but also have a natural authority to ensure that the fundamental changes the MBI implementation brings will be enforced. The second member of the team should be a business representative that together with the CIO participates in defining IT governance rules and other rules determining the relationship between business and informatics. The third member of the team should be technology oriented, responsible for defining technology-oriented tasks and technological aspects of the business. In the case of larger organizations, it is appropriate to add a finance department representative that will address cost and revenue aspects of the MBI implementation.

3. Identifying areas (groups of tasks) that business informatics needs to address including their priorities. The MBI implementation objectives defined in the first step constitute the input into this step. Its output repre-

sents a set of tasks implemented in the organization including their priority. The implementation team is recommended to use the MBI task catalog during this step.

Designing Information Systems

The key to successful information systems is good design. But what makes a good design? A number of disciplines weigh in on this topic. We will look at design from a number of different perspectives.

Whenever possible we will contrast good and bad designs.

Different people use the word design in different contexts. When IS professionals speak of design, they are referring to business processes. Problems must be analyzed and requirements documented before solutions are designed, developed, and implemented. After all if the design does not satisfy the business need, then what's the point? However, satisfying the business need is really a baseline standard. The vilified hospital system described earlier meets the business need of registering patients. And yet its design is in other ways lacking. Similarly, fast food meets the need for feeding one's hunger. However, we want to be metaphorically better than fast food in our designs.

Usability describes how easy the system is to navigate. The easier the system is to navigate, the less time a user will need to spend learning to use the system. A more usable system also leaves less room for error. Usability theory provides rules of thumb (heuristics) that document best practice conventions for designing a user interface. Amazon.com has one of the most usable online systems because they follow established conventions. Following conventions tremendously increases the potential acceptance of your website or app.

Graphic design refers to the visual appeal and organization of the user interface. There is obviously some overlap here with usability. Usable systems typically adhere to at least some graphic design rules. However, a usable system could be bland and uninteresting. Employing graphic design principles helps ensure that the system will have visual appeal. Designs also need to fit with the overall brand of the client.

Existing colors, fonts, and logos are all a part of the brand for which the system is being created. Analytical Design describes how to best represent information—especially quantitative information—to communicate clearly and truthfully. Every information systems project has quanti-

tative dimensions associated with project management. These include estimating costs, time schedules, and so forth. Information systems are designed using the systems development life cycle (SDLC). The SDLC is to a large extent common sense spelled out in stages. First, analyze the current situation. Then specify the requirements that a solution should embody. The next stage is to design a solution (no programming yet). Then the system is developed (programmed) and tested. Finally, the system goes live for the end users as it is implemented in the business setting. To review, the five phases are:

1. Analysis.
2. Requirements (vision of future state).
3. Design.
4. Development.
5. Implementation.

It is good to frequently interact with the end user and show them screen mockups and a systems architecture diagram of what the final system will look like. The systems architecture is a hierarchy diagram of the flow of the website or app—what the relationship between the pages of the system will be. It is sometimes called a site map. Ideally the systems architecture is done on paper with sticky notes that can be moved around at will by multiple users. A final systems architecture can be represented as a hierarchy chart in PowerPoint. Once the systems architecture is complete, wireframes or mockups of the individual pages may be constructed. Mockups are non-functioning pages generated in a drawing program such as PhotoShop, Omnigraffle (Mac), or even PowerPoint. PowerPoint turns out to be a fairly respectable mockup tool— especially when working off of some predefined templates.

Goal Directed Activities

Implicit in each current and future state are one or more business processes. A business process is a set of goal directed activities. In other words, a process describes the actions To-Be taken to accomplish a task. For example, applying to a university, filing taxes, and evaluating employees are all processes. The steps in applying to a university might include filling out an online form, submitting a credit card payment, requesting test scores be sent, and requesting that high school transcripts be sent.

Note that all of the processes mentioned above took place even before the advent of computers. Try to imagine how. Information systems simply transform the processes with the goal of making the process more efficient, convenient, effective, reliable, and so forth.

First, we represent the current (usually deficient) state As-Is process. Seeing the As-Is process diagrammed exposes obvious areas for improvement in the process. For example, many years ago students registered for classes in person. The As-Is process in that era might have shown a student waiting in line outside a large auditorium. When his turn comes up, the student enters the auditorium. There are tables representing each department staffed with faculty from that department. For each course that the student wishes to take, he must find the corresponding department table and add his name to the list for that class. Buying concert tickets followed a similar process before services like Ticket Master went online. People used to camp out for days in advance outside the Ticket Master office.

Sometimes information technology may improve processes, other times no technology is required. Sometimes the solution is as simple as providing information for individuals completing a business process at the appropriate time, or simply rearranging the steps in the business process, in which case, no new information technology is needed.

The redesigned and improved business process is called the To-Be process. This process takes into consideration the deficiencies identified in the As-Is process and the goals of the business. The area of work that fo- cuses on improving business processes is called business process redesign. Individuals performing this work focus on understanding the As-Is process and how to improve it in the To-Be process.

Business Process Examples:

<u>Shopping at a grocery store</u>

1. The deli
- Taking numbers
- Rules about which products can be sliced on which machines
- Rules about wrapping product after slicing

2. The fish counter
- Taking numbers
- Rules about how to prepare the fish—head and tail off and so forth.

3. Checkout
- Scanning and weighing procedures
- Gathering customer data

- Printing customized coupons
- Optimal bagging
- Taking payment.

Note that most business processes subsume other business processes. One of the toughest challenges is knowing what process to focus on and with what degree of granularity to zoom in on the process. Never lose site of the problem you are trying to solve—and use that as your filter.

Calculating the Terms of a Loan

Many businesses need a loan in order to cover startup costs. Many entrepreneurs will turn to family for a loan. However, the danger here is that you are risking not only your family's money, but also the relationships if the business should go under. On the other hand, small businesses without a prior track record sometimes have trouble securing a bank loan. Fortunately, there are government agencies at both the federal and state levels that help businesses secure grants and loans.

Loan payments form part of the fixed costs of a business. Determining the payments on a loan is an important part of forecasting costs. The financial formula that calculates loan payments is fairly complex.

However, Excel provides an easier way to calculate loan payments using the payment (PMT) function. The PMT func- tion is one of many built in Excel functions. In many cases, we want to create our own formulas so we have a clear idea of how the information is constructed.

However, in some cases the formula might involve more complex math where the possibility for error is greater. In these cases it is better to use a built in function that has already been tested and debugged. There are also functions that avoid busywork that you could do yourself but would probably prefer not to do.

On a small scale this is analogous to the *build vs. buy* issue. Think of formulas as things that you build whereas functions are things that you "buy." We put buy in quotes because many functions, including the payment function, are bundled with Excel. That is part of the way that Excel maintains its leadership in the spreadsheet marketplace. Most functions process input to produce a result. Perhaps the most popular function in Excel is the sum (SUM) function, which adds up a long list of numbers. The input for the Sum function are the cells to be added together. The example below shows the sum function compared with the equivalent

formula. The formula is obviously very tedious as it involves adding all the numbers. This is expressed as *= A4+A5+A6+A7+A8+A9+A10+ +A11+A12.*

The sum function accomplishes the same task more simplistically. This is expressed as = *SUM(A4:A12*).

Note that in both cases the result is the same: 1,427.

One nice advantage of the sum function is that if we were to add a row in the middle of the list, say between row 7 and row 8, the sum function would automatically expand to accommodate the new row, but the formula would not.

The payment (PMT) function calculates loan payments automatically. The format of the PMT function is: = *PMT(rate,nper,pv) correct for YEARLY payments:*

- Rate is the interest rate, usually expressed as an annual percentage rate (APR). If payments are made once a year then just plug in the APR. However, payments are usually once a month. So you need to divide the rate by 12.
- Nper is the number of payment periods. Again, if payments are made once a year then nper is just the number of years of the loan. However, payments are usually once a month. So you need to multiply the nper by 12.
- Pv is the present value of the loan, in other words the loan amount today. Adjusting for monthly payments produces this modification of the function: *=PMT(rate/12,nper*12,pv) correct for MONTHLY payments.*

By the way, you can use the PMT function to calculate payments on car loans and home mortgages. Note that it is hard to even follow a complex mathematical formula when it is written in Excel.

In the United States, the federal government places requirements on the actual wording of a loan. The intention is to force lenders to be honest about the terms of the loan and to allow buyers to comparison shop loans. First time home buyers are often shocked to find that their finance charge actually exceeds the amount of the loan. In other words, over the life of the loan they end up paying around twice the closing price of the home. Home loans have higher finance charges because they are often stretched out over thirty years, which is a lot of time to compound interest. Similarly, if we were to stretch our $5,000 business loan out over thirty years, the finance charge climbs to $8,208, which exceeds the amount of the loan.

Analyzing business processes

Our ultimate goal when we model business processes is to describe what the business does in a hierarchy of detail from a high level down to the level where documents and specific information components in document exchanges are visible. But when we analyze processes, the information we discover will come from many sources and at many levels of abstraction and granularity. It helps ensure consistency and completeness if we try to answer the same questions for each process we encounter. If our goals are strategic, we will be taking a top-down approach and interviewing senior executives or managers with a big picture view of an enterprise. This method tends to yield processes that are very abstract or very generic, partitioning activity into large, goal-oriented chunks. Questions whose answers describe processes at this level are

- What is the name of the process?
- What are the goals or purposes of the process?
- What industries, functional areas, or organizations are involved in the process?
- Who are the stakeholders or participants in the process?
- Are there any problems with the current process?
- How could the process be improved?

Asking questions and recording their answers in a disciplined way rapidly creates a web of related information about interconnected processes from which we can develop models. We will get more useful information if we ask our questions and record the answers using the standard vocabulary and definitions for the concepts and processes within the domain we're working in, if such a business reference model exists. There is no single correct way to model business processes

But the simple truth is that there is no single correct way to model business processes and no set of questions that will magically lead to the models. For example, if we ask these same questions of less senior people in the organization, or ask people who have an operational focus or role, the analysis will take on a more bottom-up and more technology-driven character. This will yield a greater number of transactional details, often identified by the specific documents they produce or consume. This view is necessary for implementing and integrating the applications that will carry out the processes, but the processes will be at a vastly different lev-

el of abstraction and granularity than those identified by top-down or strategic approaches.

To truly understand a business process we need information from both the top-down and bottom-up points of view. Informants higher in the organizational hierarchy with a strategic focus are less likely to know process details or problems. But they might advocate and clearly articulate an end-to-end, customer-oriented philosophy that describes the process in an idealized form. Conversely, the salespeople, customer service representatives, order processors, shipping clerks and others who actually carry out the processes will be experts about the processes, their associated documents, and problems or exception cases they encounter. But they rarely recognize the conflicts in priorities between functional departments that undermine the company's overall success at satisfying customers.

In any case, using only abstract organizational-level and concrete transactional-level models leaves a gap in the middle, and we can't connect business issues to technology concerns unless we can cross it.

Business Information Systems

Most information systems can be grouped into three broad classifications—enterprise systems (ES), knowledge management/collaboration systems, and business intelligence (BI) systems. These collectively comprise the information systems architecture for an enterprise.

Enterprise systems are used to manage the day to day business processes. Supply chain management (SCM) controls inbound and outbound logistics.

Customer relationship management (CRM) manages communications and marketing initiatives directed at customers. However, the grandaddy of them all are enterprise resource planning (ERP) systems that control business transactions from accounts payable/receivable to product movement on the factory floor. If this seems dense now, don't worry about it. Books have been written about all these pieces. What is important for you to see is that ideally all the systems are smoothly coordinated so that management makes information driven decisions.

All of these enterprise systems communicate and share information as needed. They also store each of their activities in databases. At regular intervals these databases are copied into a centrally located data ware-

house. The copying process is called **extract, transform and load** (ETL). Data is extracted from the multiple databases, transformed to a common format, and then loaded into the data warehouse.

The data warehouse then becomes a gold mine of data about the business. The beauty of the data warehouse is that it can be queried offline without interrupting operations of the business. However, the data warehouse is only as useful as the systems that query it for information. These are called business intelligence (BI) systems. One of the most well known types of BI systems is for advanced reporting or data mining. BI systems look to spot trends in the data and then convey that information to the appropriate management level. For example, BI systems discovered years ago that diapers and beer were often purchased in the same supermarket visit. Clever marketing sleuths concluded that dad sent out to buy diapers was also picking up a 6 pack on his way out of the store. This creates opportunities for product placement—locating the beer closer to the diapers.

Knowledge management and collaboration systems are ways that members of the organization capture and institutionalize organizational knowledge. The most familiar types of systems are internal websites for the company as well as blogs and wikis. However, leading organizations will also require that reports be filed in a systematic way to allow for easy retrieval in case the organization encounters a similar business problem in the future.

Matching Graph to Data Type

After you establish the integrity and relevance of the content, you will next need to focus on the type of graph you will use to display the information. Most business graphs (bar graphs, line graphs, and pie charts) compare categories on a quantitative dimension. For example, comparing salaries for persons of different education levels.

- Bar graph. Bar graphs are used to compare discrete categories on a common measure. In other words, the measure is quantitative and the categories are qualitative. For example, compare sales figures (quantitative) in different geographic regions (qualitative).

- Line graph. Line graphs compare continuous categories on a common measure. They are often seen in business, especially to show trends over time. The time appears on the X axis, and the quantitative data to be

measured appears on the Y axis. Examples are sales, stock market trends, or mortgage rates over time. A text box is often placed near these graphs to explain the reasoning behind changes in trends.

- Pie chart. Much like a bar graph, a pie chart compares discrete categories on a common measure. Unlike a bar graph, a pie chart can only show one series of data. Although pie charts are commonly used in the media, a bar graph is a better way to convey the same information in a way that allows for much easier comparisons between categories. The relative height of bars is easier to compare than pie slices that must be mentally rotated and aligned for comparison. Bar graphs also allow for multiple data series to be compared on the same graph, but pie charts are limited to one data series. Overall, pie charts should be avoided.

- Scatterplots. Scatterplots do the best job of adhering to Tufte's principles of showing multivariate data and causal relationships. In a scatterplot, both sets of data are quantitative. The cause (independent variable) appears on the X axis, and the effect (dependent variable) appears on the Y axis. For example, in economics, scatterplots can be used to show trends in price versus demand. Greater demand for a product or service (independent variable) leads to higher price (dependent variable). In spite of their explanatory power, scatterplots are rarely found in business.

A good graph may improve decision making

The Space Shuttle Program had its first successful launch in 1981. From the beginning NASA made "caution" a buzzword in the program. The temperature at launch is significant because it can potentially affect the performance of rubber parts on the shuttle. During the night preceding the launch, there was an eleventh-hour debate on the wisdom of launching between NASA and Morton Thiokol. Thiokol was the contrac- tor for the two solid fuel rocket boosters that help propel the shuttle into orbit. Thiokol engineers feared that the rubber joint would harden in the cold weather, thereby compromising its ability to seal the joint. The engineers were correct but not persuasive. Unable to substantiate their claim with data, the engineers caved under pressure from NASA and signed off on the launch. The Challenger and its seven-member crew were lost 73 seconds after launch when the O-ring failure caused the booster rocket to explode.

On the eve of the launch engineers tried to explain the problem with a diagram. Their concern was that escaping hot gases would erode or eat away at the rubber O-ring seal. Sufficient erosion would release a flood of hot gases, sort of like a break in a dam. That was what happened to Challenger and it was catastrophic. There were 24 successful launches prior to Challenger. However, the entire discussion centered around only two previous launches, You will note that when the engineers reversed their no launch recommendation, it was not because they had new evidence, but rather because their existing evidence was too limited to be conclusive. The moral of the story is to always look at the entire data set.

Simulation modeling

From the standpoint of history, simulation modeling (SM) has had a relatively short development cycle in comparison with other types of modeling, starting from the 1960s. Its establishment brings modeling theory to a qualitatively new level. As a result of the development of information technologies and computational methods (simulation as a type of modeling never existed without computers) new high technologies appeared in this sphere in the 1990s.

The theoretical and methodological fundamentals of simulation modeling have been formed in the process of establishing a broad specter of system methods and system approaches, general systems theory, cybernetics and synergetics, adaptive regulation and automatic control, information theory and, finally, modeling theory – the system modeling technology, according to the definition given by the Russian classical scientific school.

The methodological foundation of simulation modeling is applied system analysis which facilitates practical application on the basis of the system analysis methodology for the purpose of solving various complex problems in different fields. The central procedure of system analysis is the construction of a generalized model which reflects all the substantial factors and interconnections of a real system. Attempts to formulate a general theory of simulation modeling have always led to particular generalizations that had some intersections with all the branches of systemology and a search for a universal methodology for describing processes in complex systems.

In practice it has always been a way of solving particular applied problems. Military people were the first ones who used simulation in order to reduce the costs of expensive experiments. They were followed by engineers who needed reasoning for project decisions in complex technical systems; now it's the turn of economists, sociologists and managers – because in these fields experiments with real-world systems are wholly inadmissible.

The establishment of synergetics and its variations studying objects of different character, in comparison with the complex of systemological sciences, its predecessors, has updated dynamic systems analysis, focusing it on research of specific structural and dynamic changes in complex systems, studying the transition processes from chaos to order and back, including the processes of self-organization and self- disorganization in open, non-linear environments of different character.

Though cybernetics and automatic control theory, as comprehensive management sciences, included negative inverse relations, they generally studied the issues of ensuring system stability. Moreover, synergetics is a theory of non-stationary, developing systems for which the influence of fluctuation becomes a reason for substantial changes in the system behavior. The synergetic and information approach can be regarded as a further development of the system approach but it provides new opportunities for studying processes and events in society not only in stationary state but also allows us to analyze the processes of development and disharmony in complex systems.

The simulation modeling method is an experimental method of research into a complex system on the basis of its counterpart – a computer model directly replicating structural and dynamic properties of the object being modeled, which combines the specific features of the experimental approach and the specific conditions of using computer technologies. This definition emphasizes two important characteristics of simulation modeling (and it is also the source of non-scientific and incorrectly translated name of this method in Russian):

- marked isomorphism of structural and dynamic characteristics of the object and its computer counterpart;

- experimental character of simulation (in order to obtain data about the object being modeled, we need to carry out a goal-directed computing

experiment on a simulation model; its content and method are stipulated by research tasks.

Evolving Internet Governance

Because the Internet is a shared environment, its governance is a shared responsibility. Put more succinctly, the form of the Internet Governance Forum should follow its function. So what could a shared responsibility regime for IoT safety look like? We have previously argued that "forum follows function" in the context of the Internet Governance Forum. This means that the IGF has the ability to perform the functions to (1) identify emergent IoT safety challenges, (2) facilitate the creation of multi stakeholder working groups that set out to develop solutions and to (3) monitor the effectiveness of these solutions allowing for open analysis and discussion, critiques and proposals for amendments or new recognition of problematic phenomena. Traditional regulatory practices struggle to keep pace with the speed of innovation on the Internet. A more traditional "top-down" governance approach would stifle the very user benefits that stakeholders seek to enhance.

This means that, far from any a single "one stop shop" for Internet governance, the informal practices that brought the Internet to the amazing state of constant growth and evolution today will, itself, continue to bring new and innovative governance systems along for the ride. Governments are important, but they do not play an exclusive, top-down, dominant role. Instead, governments participate on an equal footing as representatives of their respective constituents. These constituents – from the private sector to civil society to technical experts – are often in a tussle with governmental representatives and other relevant stakeholders on an issue by issue and sometimes case by case basis. Through an inclusive and transparent process, this helps create a truly global governance sphere.

What areas are each of these groups likely to advocate in the IoT context? A few of these roles include the following:

Government. Set a high but implementable bar for protecting citizens, with two objectives: enforcement (e.g., consumer protection as well as health & safety concerns) and education (for example, phishing requires a sensitivity from the consumers that no system can absolutely protect).

Private sector. Build the most secure systems possible, and share the education objective on how best to use tools available. Solicit ways to involve users as partners in providing better safety and security.

Civil society**.** Represents the user and public-interest perspectives. Civil society plays a key role in verifying that checks and balances for governmental institutions are functioning and in keeping up with technological innovation. It also ensures that the line between government and the private sector is maintained. Additionally, there is also an educational objective to spread digital literacy, and this includes educating users about safety and security. Finally, civil society is on the front lines to protect human rights in dangerous parts of the world, and to educate citizens to be safe and secure online.

Technical community. The "technical community" makes sure that the standards are advancing properly (e.g., work of the IETF) and that protections and best practices (like DNSSEC) are implemented in the Internet's critical infrastructure. Although each group has its own educational mandate, the technical community also shares some similar educational objectives as civil society to educate all stakeholder groups (and in particular, users) on the proper design and functioning of various systems.

As we think further about the meaning of safety, it is useful to identify how these concepts can be found in different ways in the different layers of the Internet. In this vein, we believe that it is most sensible to look at the evolution of the Internet (and its governance) from the perspective of a "layered model". As we look at the different parts of each network layer, the resources (and hence the stakeholders) are a variable mix of private and public actors. Only in the logical layer is the resource largely a shared, public commons. As a result, in all the layers (except logical), the blend of private and public goods means that responsibility for safety issues remains with a mix of private and public actors. By contrast, the logical layer operates under a different governance regime than the others, one that accounts for this material difference. There, responsibility for safety matters lie with the pertinent multi stakeholder governance community as a whole (rather than distributed among the stakeholders).

THE MODEL OF BUSINESS ORGANIZATION SHAPES THE NEED TO EXCHANGE INFORMATION ACROSS ORGANIZATIONAL BOUNDARIES

The nature of interorganizational information exchange (or the lack of it) reflects an assumption behind functional organization that the business environment in which the business operates is relatively stable and that operational efficiency is the key to its success. Such a business might have carefully documented processes and be relentlessly focused on both following them and improving them.

But a business can't be good at everything; one business may view operational efficiency as its key to success, while another may strive for product innovation, and another may aim for unsurpassed customer satisfaction.

A focus on satisfying customers is often the motivation for a cross-functional organization in which some of the core business activities are duplicated across product lines, customer segments, or geographies. A cross-functional organization requires more coordination and information exchange between business units, but this overhead can yield substantial benefits if it is used to create a more responsive and value-focused business. Such businesses are likely to tolerate less rigorously specified processes, and some might even encourage employees to ignore them if they get in the way of satisfying customers.

Few companies need to develop all functional business areas to the same extent, because the relative emphasis and resources they require depends on their role in the enterprise value chain. A successful business focuses on the activities that are essential to its definition of success and doesn't squander attention and resources on those that are not.

This idea of core competency is the essence of a high-level description of a business. A model of a business at this very high level helps us understand it independently of its current or future technology. It is a strategic view that can identify some of the gaps, inefficiencies, overlaps, and opportunities in what the business currently does or does not do. At this level of modeling, the view of a business is highly qualitative and usually recorded in narrative form, perhaps with some accompanying diagrams like organization charts. This synchronization of processes within and

between enterprises requires information exchanges of some kind. As businesses adopt web services or service oriented architectures, interenterprise exchanges have increasingly become loosely coupled document exchanges. Many of the intraenterprise exchanges have also become loosely coupled, but a wider range of integration architectures and patterns are feasible when the information doesn't cross an enterprise boundary.

And of course, business processes do not operate in isolation. They form part of the overall business activity that defines the existence of the organization.

A business reference model captures the consolidated wisdom about how to think about and carry out the most important or frequent business processes. It standardizes the vocabulary and definitions for processes within a particular industry or domain. These standards enable unambiguous communication between participants and facilitate the measurement, management, and improvement of their processes.

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