

# **The Golden Ratio: The Balance Between Price and IT Needs**

**A comparison of the opinions of financial directors and IT managers from the 500 largest  
Czech companies on investment in computer technology.**

The golden ratio—The term golden ratio (in Latin: *sectio aurea*) is used to refer to a value of approximately 1:1.618. In art it is regarded as the ideal proportion between different lengths. The value of this ratio is equal to the irrational number:

$$\varphi = \frac{1 + \sqrt{5}}{2} \approx 1,61803\dots$$

Since no later than the Renaissance, the golden ratio has been used by artists in their works, in particular in the form of the golden rectangle, in which the golden ratio appears as the ratio between the sides. The golden ratio apparently has an aesthetically pleasing effect. The golden ratio can also be found in nature. [...]

(Wikipedia: Open Encyclopedia. *Golden Ratio*.)

## What is the consensus?

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- Money does not come first
- Increasing productivity and returns on investment is more important
- Tried and tested solutions are preferred over the latest new ideas
- When making decisions about purchases, the most important factor is quality service and the supplier's reputation
- The most important priorities in deciding on a purchase include maximum system security and disaster prevention
- Decisions on purchasing a system are not always made by the people who will be responsible for it

# Contents

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WHAT IS THE CONSENSUS? .....	3
CONTENTS .....	II
INTRODUCTION .....	III
MAIN FINDINGS .....	IV
YOU CAN'T DO IT WITHOUT IT .....	1
THE MEDIA AND DECISIONS ON IT .....	2
INFLUENTIAL IT MEDIA .....	3
INFLUENTIAL ECONOMIC MEDIA.....	4
RELIABILITY AND SECURITY ARE DECISIVE .....	5
QUALITY MAKES A GOOD NAME.....	6
SERVICE IS WHAT MAKES A GOOD REPUTATION .....	7
NON-FINANCIAL VALUE OF IT.....	8
SECURITY AND VIRTUALIZATION.....	9
THE AGE OF CONSOLIDATION.....	10
CONSOLIDATION BRINGS SAVINGS .....	11
COMMON LANGUAGE .....	12
RESPONDENTS' PROFILE I.....	13
RESPONDENTS' PROFILE II.....	14
CONCLUDING INFORMATION.....	15
INFORMATION ABOUT THE AUTHORS .....	15
CONTACT DETAILS.....	15

# Introduction

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## **Tomáš Rutrlé**

Director general  
Fujitsu Siemens Computers, ČR

Decisions on investments in information systems are more complicated than it may seem at first glance. We found that director generals have a fundamental influence on the planning of such investments in the largest companies in the Czech Republic, as do financial directors, executive directors and other members of boards of directors. Such a heterogeneous environment creates increased demands on marketing communications for IT producers, because statements have to be comprehensible to everybody.

It turned out that financial directors and IT managers do not always have to have the same criteria in assessing the benefits of an investment in information technology. Some have a tendency to perceive information technology as a necessary cost item and measure its impact in money. Others see the purpose of IT to be making internal company processes more efficient and checking them, or increasing employee satisfaction.

Information technology is thought to be a universal means of production for the 21st century. Information systems have the potential to create new opportunities for all, whether it concerns business opportunities or the creation and communication of knowledge and experience inside companies, or in supplier-customer groupings. It enables the creation of successful business models, such as Web 2.0 applications – both here in the Czech Republic and around the world.

Fujitsu Siemens Computers combines Japanese tradition and German quality. Shibusawa Eiichi – the father of Japanese capitalism who helped establish the group of companies that became Fujitsu in the 20th century – claimed that morality and economics must be balanced. The main finding of our research was that to make a wise decision on investing in information systems you need an overview and a Confucian balance among the various opinions of all managerial elements in a company. Each company wants to find the unique and ideal “golden ratio” between the various expectations regarding the benefit of investments in information technology.

## **Jana Pelikánová**

Director general  
International Data Group, ČR

Traditional media are not dead. This study helped us identify a number of opportunities where we, as a leading publishing house focused on information technology in the Czech Republic, can focus on meeting the demand for information. For financial directors and IT managers, media that carry information about information systems are one of the most important tools for their decisions on purchasing.

Electronic media and new Internet media are also important for decisions. Information systems are an integral part of a complex company environment and have clear economic consequences. What's more, in probably all fields of business they are fundamental for the survival and success of companies. In addition, publishing houses have to provide information in a form that corresponds to readers' current requirements.

As shown by the example of Google, new business models in our information age are apparently based on tried and traditional approaches. The advertisers that represent the main source of income for publishers are queuing up everywhere public interest in obtaining new information is concentrated. The public always gathers when new information is disseminated in a professional and accessible form.

Our opportunity consists of mediating quality, relevant information and creating an environment for virtual meetings between advertisers and their customers. As the publisher of titles focused primarily on persons with decision-making powers in IT, we have a unique opportunity to work in an area that, in the past 50 years, fundamentally helped shift human society toward the next stage of economic development. We are standing on the verge of a great concurrence between finance and information technology, and we intend to inform people of that fact.

## Main findings

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*“First you need to agree on what the company needs, and select the technical solution with the qualitative parameters. Then there are tender proceedings with the financial parameters.”* (respondent/financial director, production of building materials)

- The study’s respondents are financial directors and IT managers of the largest Czech companies. When asking questions, we used an identical questionnaire to find out to what extent their opinions on investing in information systems differ.
- Both these professions have a key influence on investments in information systems. The task of some of them is to check the efficiency of the funds expended, others are to perform maintenance and development. It was confirmed that both financial directors and IT managers approach information technology as a means of optimising company processes.
- Financial directors and IT managers take advantage of different sources of information that help them decide on investments in IT. Some prefer economic publications, others IT media.
- When selecting a supplier of information systems, the service provided and the supplier’s reputation is fundamental. Financial directors have a tendency to prefer a brand that is evidently known to them as having a high technical standard and being of good quality.
- One of the most important criteria when making decisions on investments in information systems is the degree of their positive impact on productivity in a company.
- Financial directors and IT managers most frequently claim that the criteria for assessing investments in information technology are an assessment of the return on investment with the help of non-financial considerations, such as the increased quality of products, productivity, speed of delivery, increased satisfaction of customers/clients and minimising risks.
- They both said that the main trend in IT is the attempt to increase prevention against the absolute failure of important information systems. Another trend is the consolidation of information systems and the flexible use of existing computer equipment in accordance with the needs of applications and users (“virtualization”).

### **Research aims**

- The subject of research is the opinions on investments in the development of information technology and whether the investments would lead to increases in the competitiveness and productivity of business entities.
- The study maps the planning of investments in information technology from the viewpoint of financial directors and managers responsible for administering IT at the leading companies in the Czech Republic.
- We have also examined areas in which the opinions of financial directors and IT managers differ significantly.

### **Respondents**

- The questioning took place between June 5 and 15, 2007, by means of an Internet questionnaire.
- We contacted 502 IT directors and 495 financial directors from 561 of the largest Czech companies.
- The questionnaires were completed by 93 financial directors (19 percent of those contacted) and 124 IT managers (25 percent of those contacted).
- Most financial directors (73 percent) and a quarter of IT managers (25 percent) are also a member of their company’s top managerial body, e.g. the board of directors. Most IT managers (71 percent) are members of middle management.
- Most respondents state that their company has an approved official plan for the development of information technologies (70%).
- For more information, see the Respondents’ profile chapter on page 12.

# You can't do it without IT

## How do you regard information technology in your company?

Financial directors and IT managers agree that, without information technology, their companies could not get by. In addition, both groups of respondents agree with the statement that using IT increases the efficiency of labor.

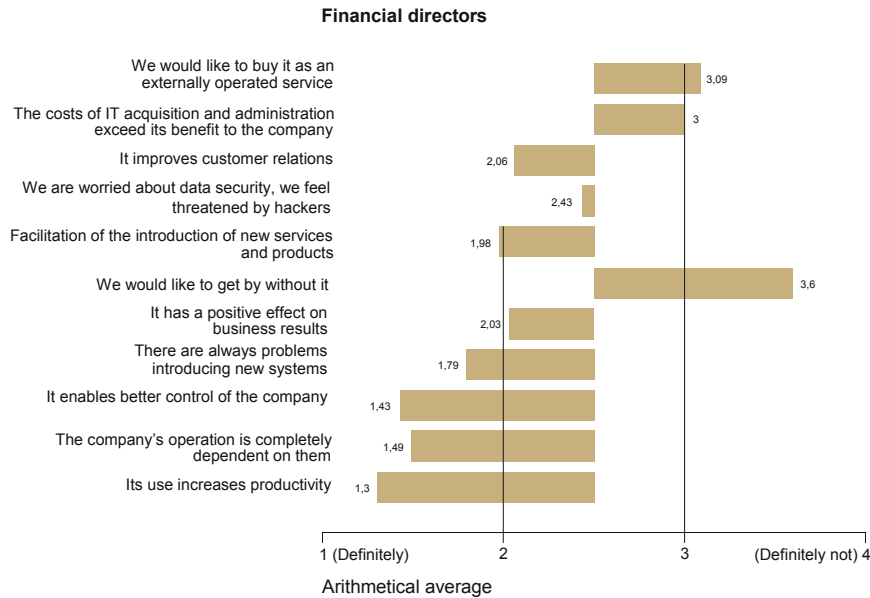


Figure 1: Scale 1 = Definitely, 2 = Probably, 3 = Probably not, 4 = Definitely not. Financial directors did not agree on whether they are worried about data security.

Both groups are convinced that information technology has a positive influence on business results, but one-fifth of financial directors say it does not really have positive consequences. Financial directors are more skeptical than IT managers in their claims that information technology facilitates the introduction of new services and products. The most marked difference is in the opinion of financial directors and IT managers on the question of whether the costs of acquisition and administration of IT exceed its benefit to the company. Although both groups state that the benefit of IT was higher than the costs of administration, IT managers are more inclined to make this claim.

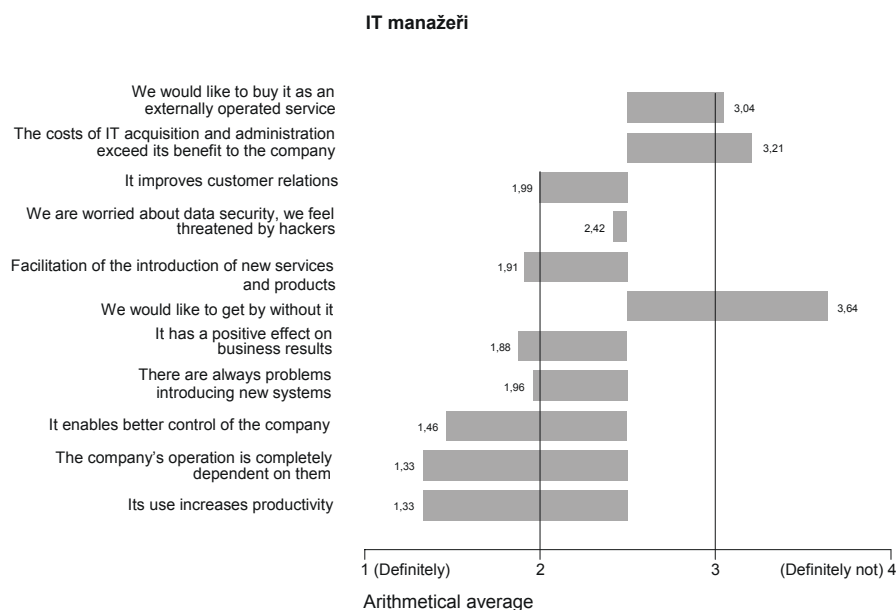


Figure 2: Scale 1 = Definitely, 2 = Probably, 3 = Probably not, 4 = Definitely not. IT managers agree, for example, that the operation of their company is quite dependent on information systems.

# The media and decisions on IT

## ***Which media are important sources of information in your decisions on purchases of information technology?***

Financial directors and IT managers agree that one of the most important sources of information for decisions on purchases of information technology is traditional IT media. Financial directors also believe that traditional economic media are another important type of media. IT managers prefer websites focused on news to economic media.

IT managers also, to a greater extent, place weight on other sources of information on the Internet, for example discussion forums and blogs.

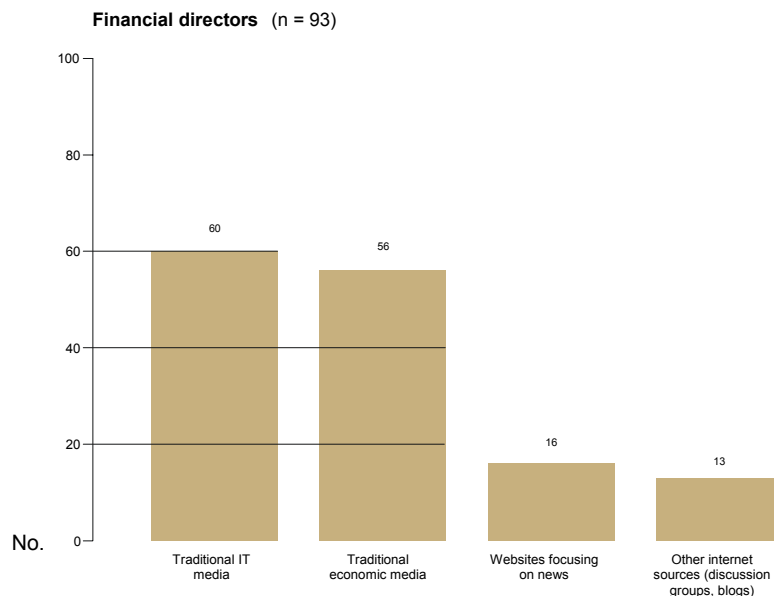


Figure 3: Financial directors use information presented in traditional IT media and economic media for decisions on investments in IT.

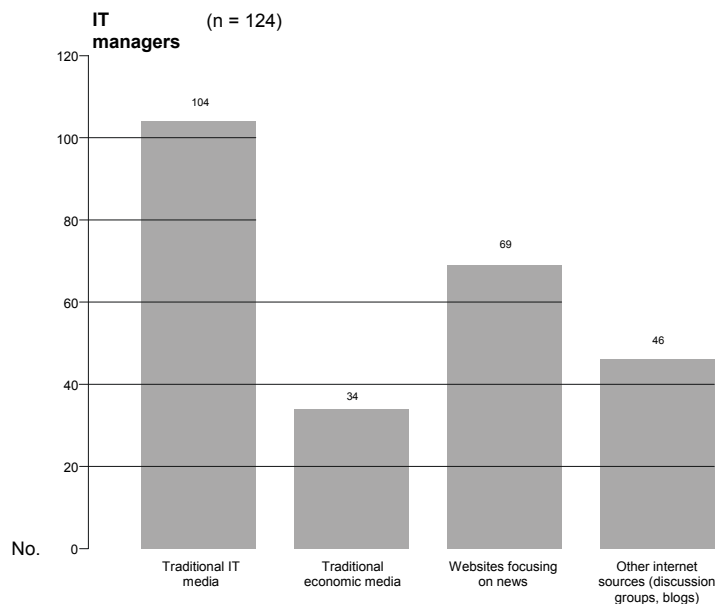


Figure 4: IT managers monitor traditional IT and Internet media to obtain information important for decisions on investments in IT.



## Which magazines specializing in IT do you read?

Financial directors and IT managers agree that the magazines specializing in IT they read most frequently are *Computerworld*, *Business World* and *Connect!* However, one-third of financial directors state that they read *Computerworld*. In contrast, two-thirds of IT managers who shared their opinions with us read *Computerworld*. One-fifth of IT managers (20 percent) read other magazines specializing in IT.

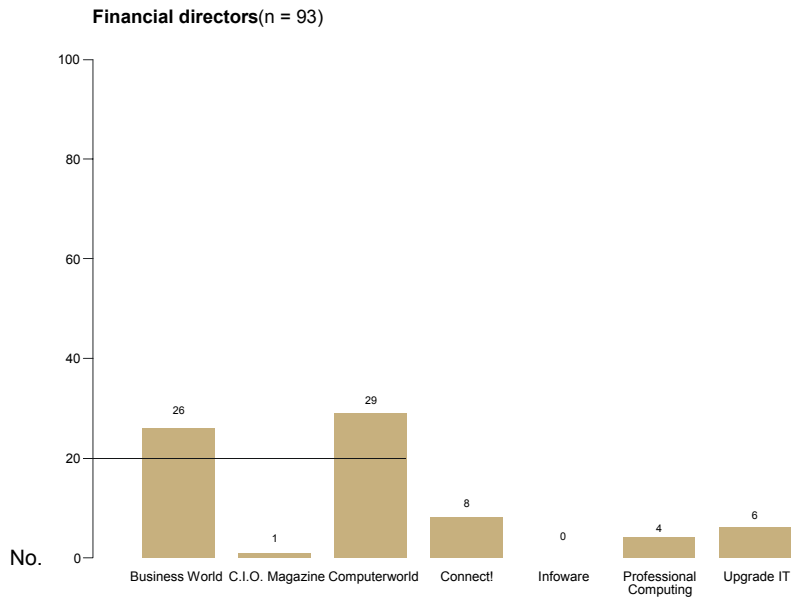


Figure 5: Financial directors most often read *Computerworld* and *Business World*.

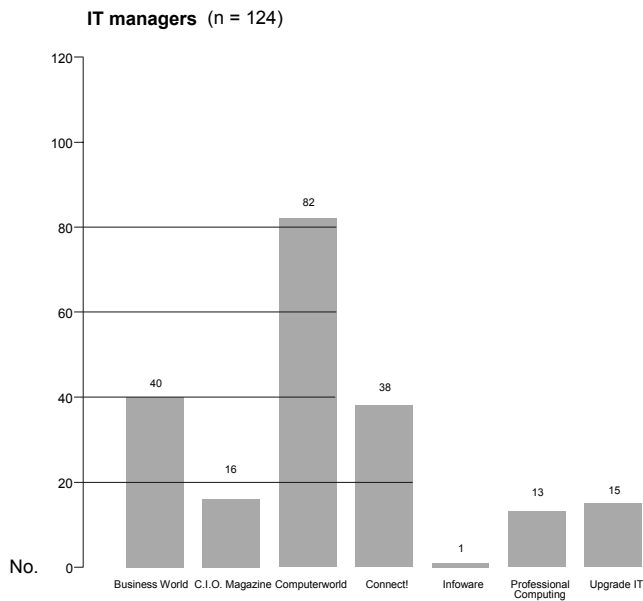


Figure 6: IT managers most often read *Computerworld* and *Business World*.

## Which of the following economic news magazines to you read?

Financial directors and IT managers agree that they follow economic news in *Hospodářské noviny* (HN). However, almost all financial directors (94 percent) stated that they read HN, whereas two-thirds (60 percent) of IT managers read HN. Financial managers had the weeklies *Ekonom* and *Euro* in second and third place, respectively, whereas for IT managers HN was followed by the daily *Mladá fronta Dnes* and the weekly *Euro*.

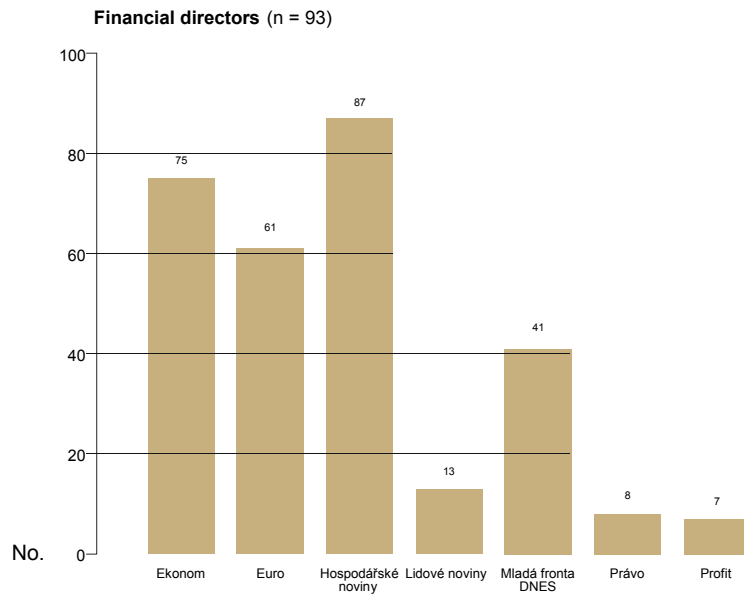


Figure 7: Financial directors most often read *Hospodářské noviny* and *Ekonom*.

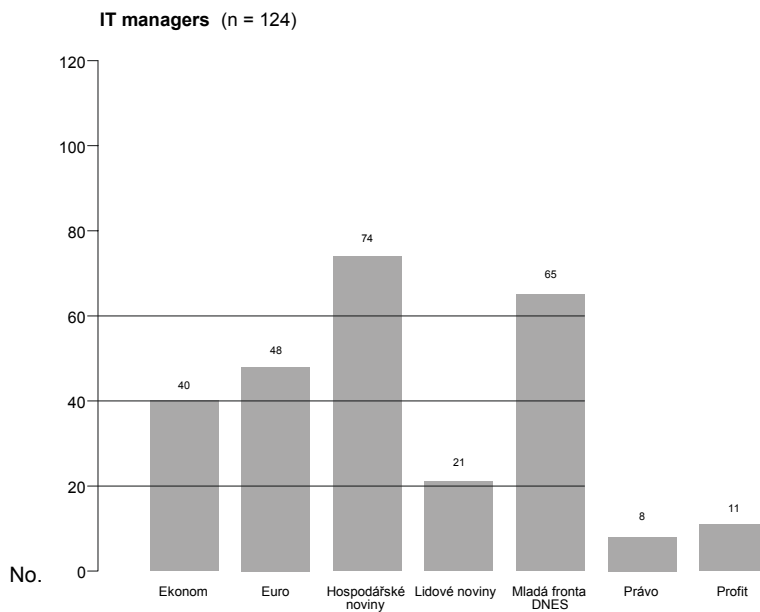


Figure 8: IT managers most often read *Hospodářské noviny* and *Mladá fronta Dnes*.

# Reliability and security are decisive

## Which of the following properties are important for the operation of information systems at your company?

The financial directors and IT managers who responded agree that the most important properties for the operation of information systems in the company are operational reliability, security, quality client service by suppliers and the system's ability to react fast to changing company needs. Financial directors and IT managers could not agree on whether the latest technology was important for the operation of information systems.

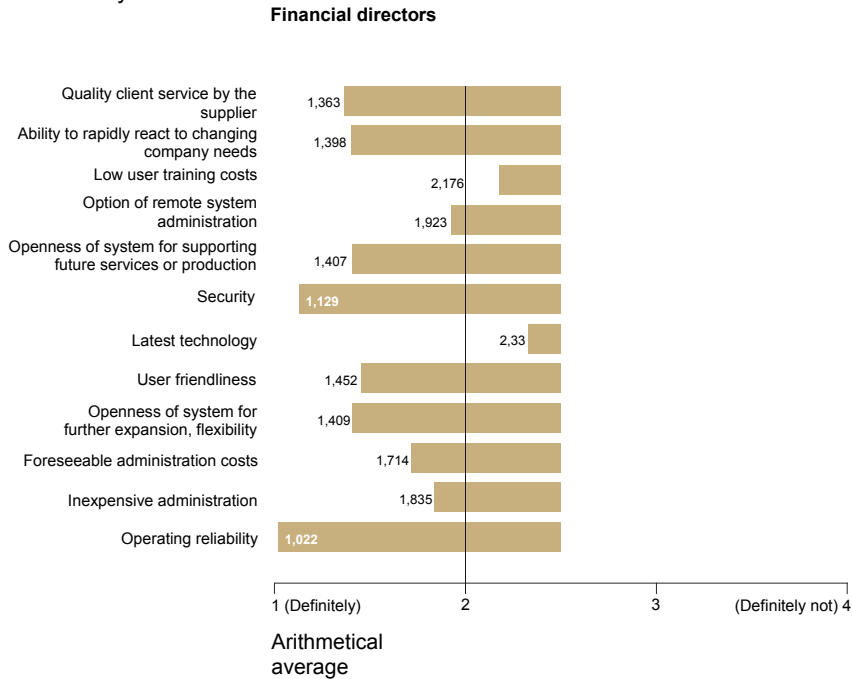


Figure 9: Scale 1 = Definitely important, 2 = Quite important, 3 = Not that important, 4 = Definitely not important. Operational reliability and the security of information systems, for example, are important for financial directors.

Financial directors rate a system's user friendliness as an important aspect of its operation more often than IT managers. IT managers, in contrast to financial directors, clearly prefer the option of remote system administration. Financial directors placed greater emphasis than IT managers on the openness of a system for supporting future services or production.

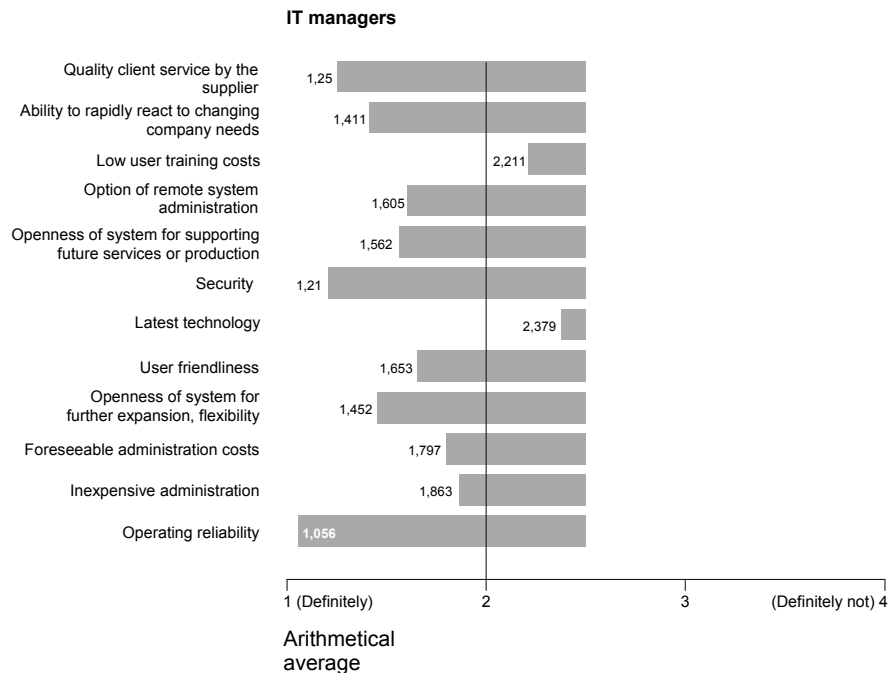


Figure 10: Scale 1 = Definitely important, 2 = Quite important, 3 = Not that important, 4 = Definitely not important. What is important for IT managers, for example, is the operating reliability and security of information systems.

# Quality makes a good name

## Which of the following criteria lead you to perceive a certain IT brand as prestigious?

Financial directors and IT managers agree that the basis of a brand's good name in information systems is a high technical standard and the high quality of the equipment provided. They also share the opinion that a prestigious brand should set the pace for the whole industry and be innovative by introducing novel solutions.

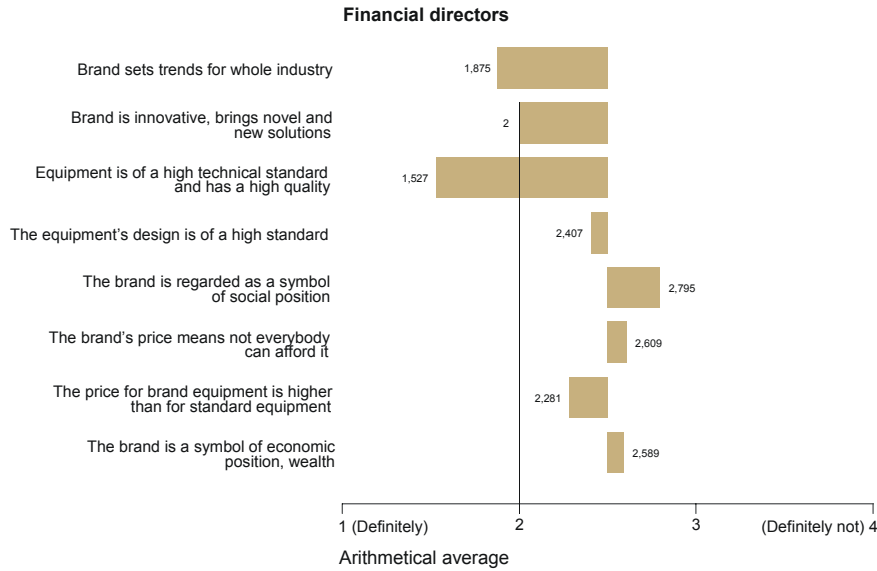


Figure 11: Scale 1 = Definitely, 2 = Probably, 3 = Probably not, 4 = Definitely not. For financial directors, a high technical standard and quality is important for the prestige of an information system's brand.

Opinions on whether a prestigious IT brand is important as a symbol of social or economic position and whether design, including a higher price, is important are not uniform among financial directors and IT managers. Financial directors have a greater tendency than IT managers to say the prestige of a brand helps create a higher price and that the design of equipment bearing a prestigious brand should be of a high standard.

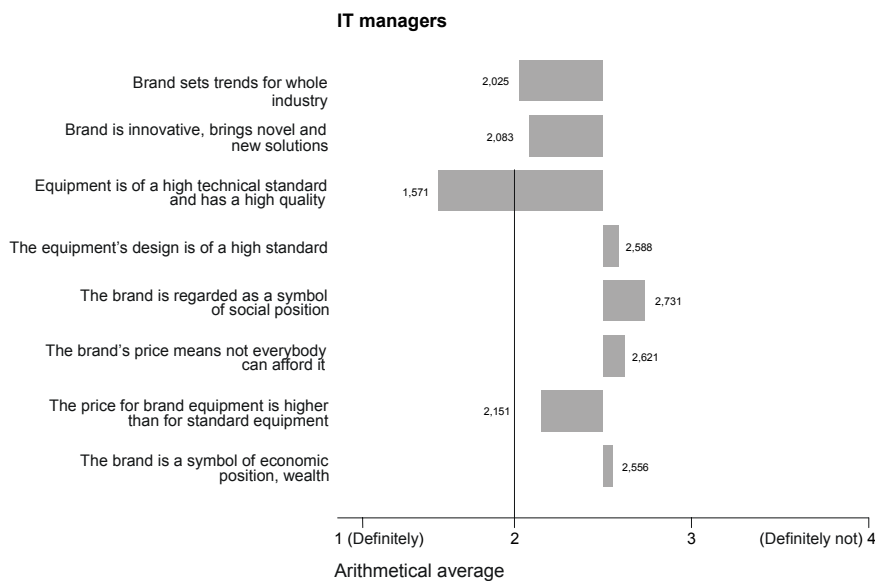


Figure 12: Scale 1 = Definitely, 2 = Probably, 3 = Probably not, 4 = Definitely not. For IT managers, a high technical standard and quality are important for the prestige of an information system's brand.

# Service is what makes a good reputation

## What is important when selecting an information systems supplier?

Financial directors and IT managers agree that when deciding on the selection of an IT supplier the service provided and the supplier's reputation are the most important factors; the price of equipment also plays a role, as do tried-and-tested technical solutions and the quality of references on the local market. They agree, for example, that the participation of suppliers in conferences is evidently not important.

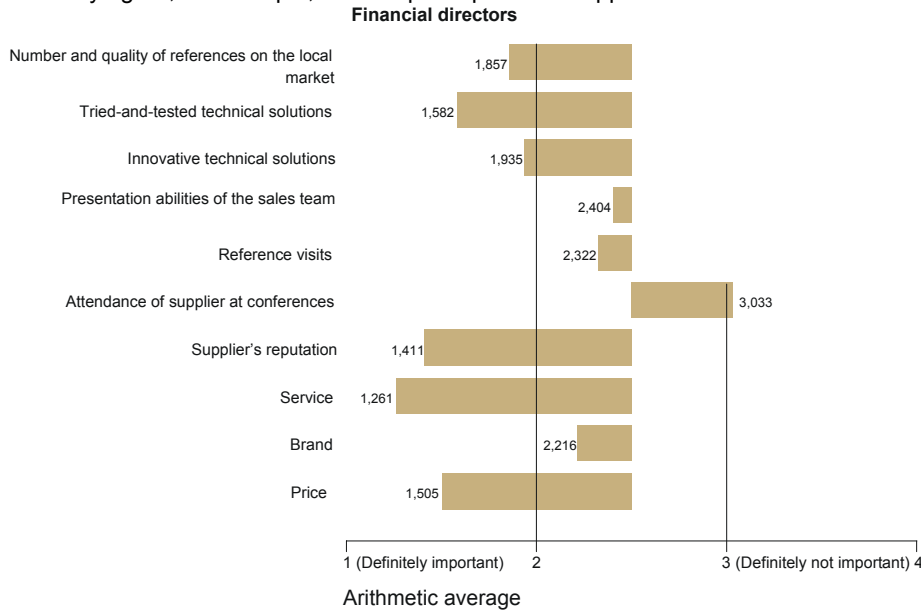


Figure 13: Scale 1 = Definitely important, 2 = Quite important, 3 = Not that important, 4 = Definitely not important. Financial directors find that service, a supplier's reputation and price are important factors for decisions on the selection of a supplier of information systems.

Financial directors and IT managers do not agree on whether the presentation abilities of sales teams and reference visits are important for decisions. The results indicate that an IT supplier's brand is more important to financial directors than for IT managers. On the other hand, reference visits to suppliers are much more important to IT managers than to financial directors. Financial directors tend to place more emphasis on a team's presentation abilities than do IT managers.



Figure 14: Scale 1 = Definitely important, 2 = Quite important, 3 = Not that important, 4 = Definitely not important. IT managers find service, a supplier's reputation and price to be important factors for decisions on the selection of an information systems supplier.

# Non-financial value of IT

## Which criteria for assessing investments in information technology do you use in your company?

Most financial directors (73 percent) and IT managers (70 percent) state that one of the most important criteria in assessing investments in information technology is the assessment of the return on investment with the help of non-financial categories, such as product quality, productivity, speed of delivery of services, greater satisfaction of clients and minimization of business risks.

In second place, most financial directors have assessing the return on investment in IT with the help of financial considerations. Most IT managers have in second place the assessment of positive side effects inside the company – for example, improvements in the quality of the work environment or increases in employee satisfaction.

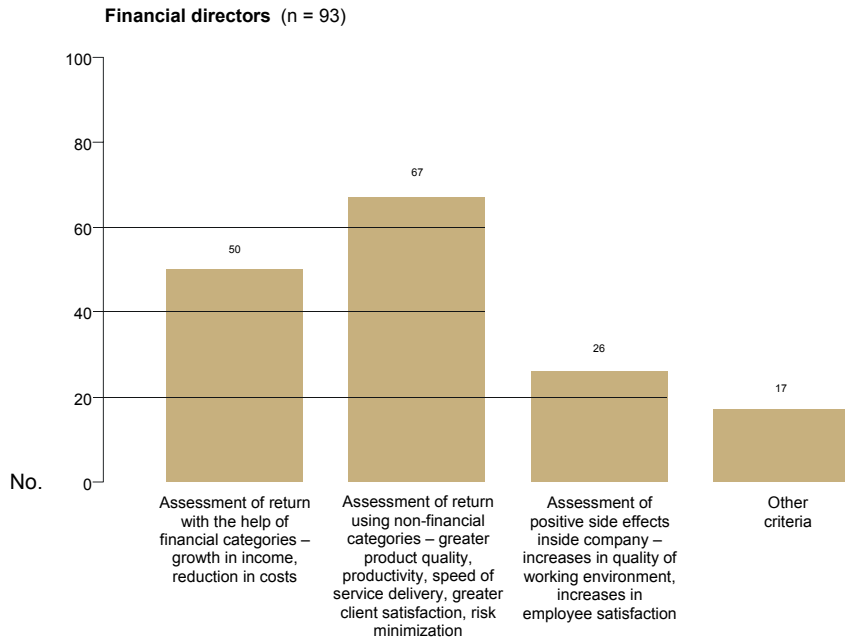


Figure 15: Most financial directors say the criteria for assessing the return on the technology used in their companies were non-financial criteria.

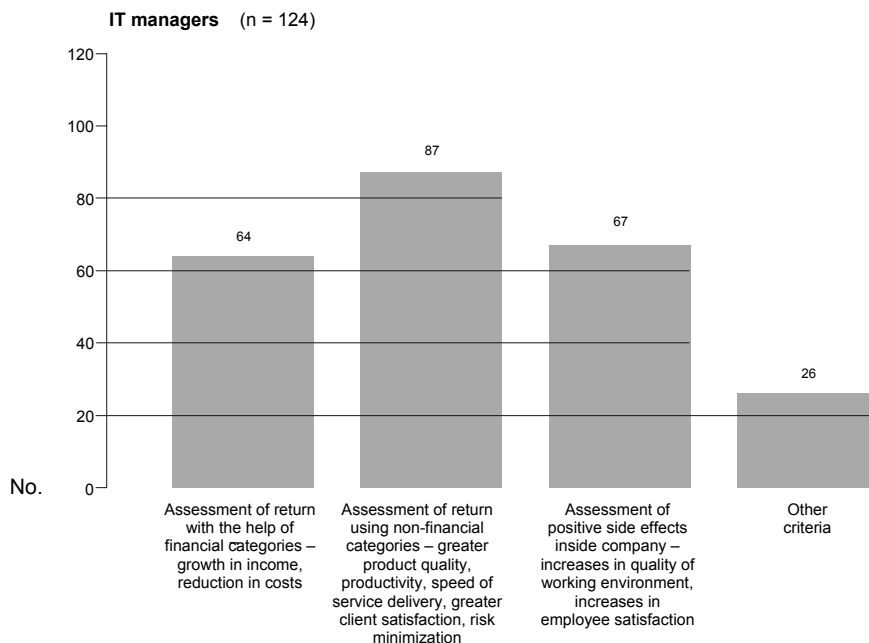


Figure 16: Most IT managers say the criteria for assessing the return on the technology used in their companies were non-financial criteria.

# Security and virtualization

## What trends do you expect in the development of your company's IT infrastructure?

Financial directors and IT managers agree that one of the expected trends in IT infrastructure for large companies was improvements in prevention of the failure of important information systems ("disaster tolerance"). Other trends include, for example, flexible use of existing means in accordance with the requirements for various applications and users, and monitoring of the costs of operating various applications and users.

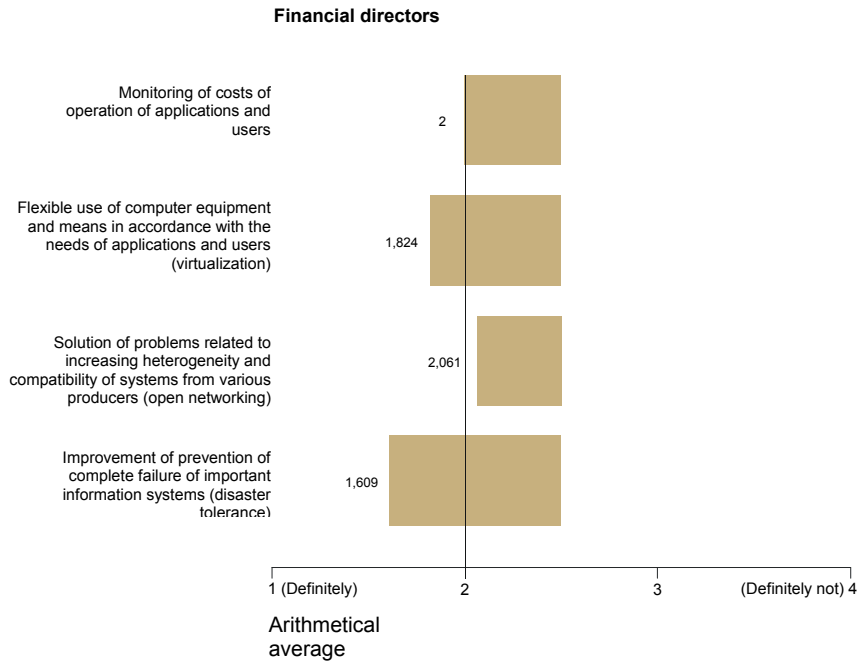


Figure 17: Scale 1 = Definitely, 2 = Probably, 3 = Probably not, 4 = Definitely not. Financial directors agree that one of the trends in IT infrastructure will be improving disaster tolerance.

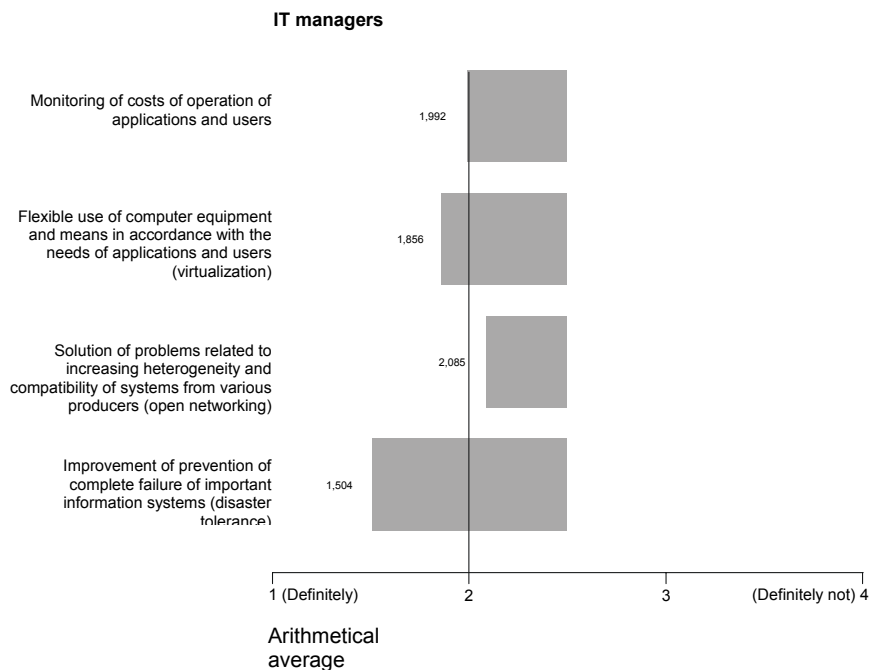


Figure 18: Scale 1 = Definitely, 2 = Probably, 3 = Probably not, 4 = Definitely not. IT managers agree that one of the trends in IT infrastructure will be improving disaster tolerance.

# The Age of consolidation

## Is your company's management considering consolidating information technology?

In most companies of the financial directors and IT managers who responded to our research, work on the consolidation of information technology is under way. Only a small group of the companies are not considering the consolidation of such systems (between 13 and 20 percent of respondents).

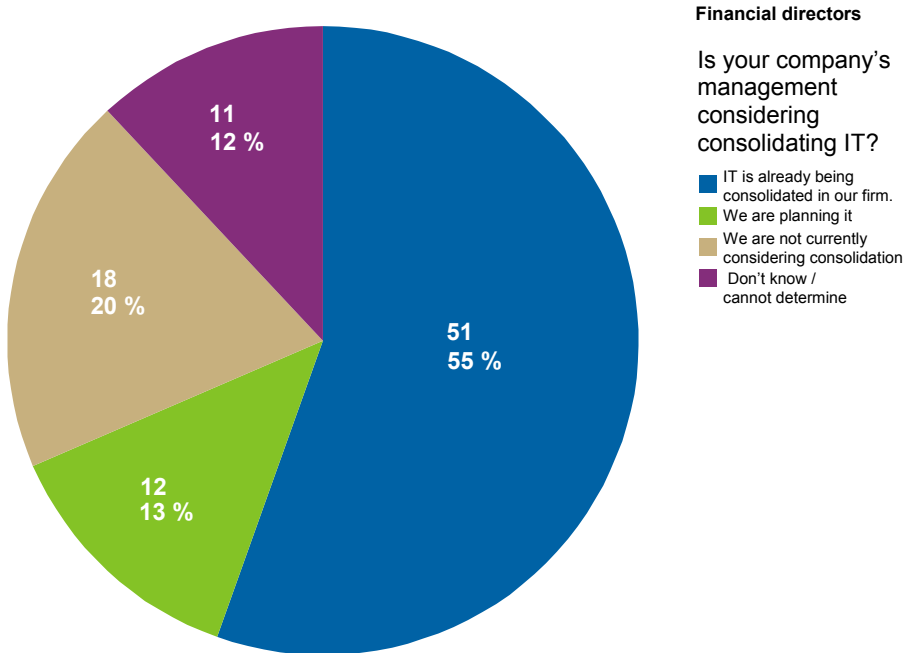


Figure 19: Most financial directors state that the consolidation of information technology is taking place in their companies or they are planning it.

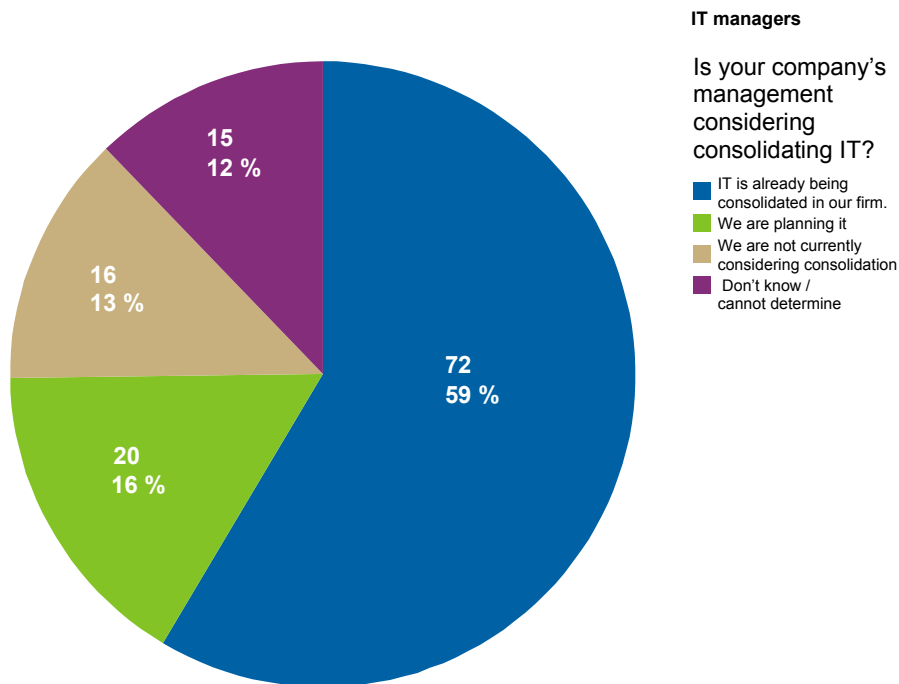


Figure 20: Most IT managers state that the consolidation of information technology is taking place in their companies or they are planning it.



# Consolidation brings savings

## *To what extent are the following reasons for the consolidation of information technology important for your company?*

Financial directors and IT managers agree that the most important reasons for consolidation of information technology include the lower demands on administration and lower costs of administration of such systems, and the fact that consolidation enables more efficient use of the infrastructure that is available in the company.

For most financial directors and IT managers, the option of paying for a consolidated system through leasing or the fact that consolidation is a general trend in IT is not an important reason.

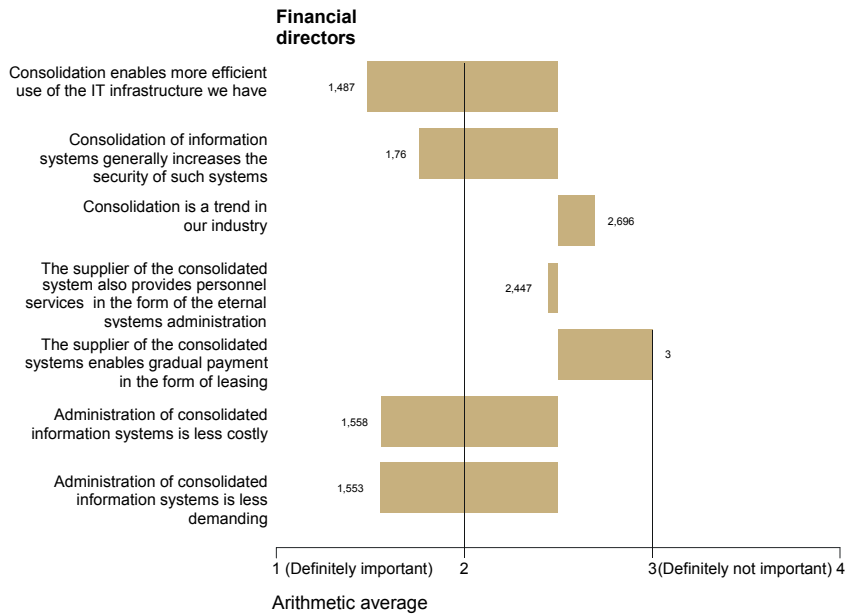


Figure 21: Scale 1 = Definitely important, 2 = Quite important, 3 = Not that important, 4 = Definitely not important. Financial directors agree that the administration of consolidated information systems is less costly and less demanding.

Financial directors have a greater tendency than IT managers to place emphasis on the supplier of a consolidated system also providing external systems administration. IT managers have a greater tendency than financial directors to claim that consolidation is a trend in the industry in which their company operates.

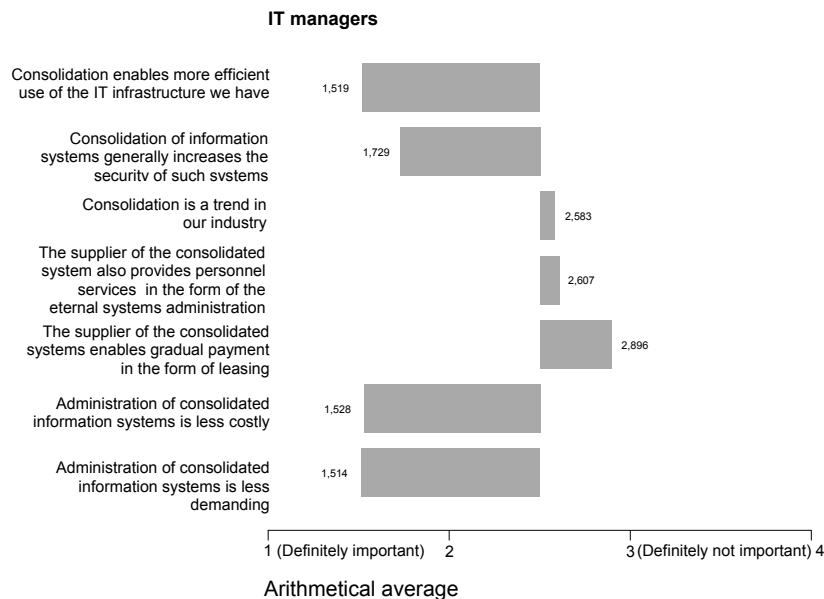


Figure 22: Scale 1 = Definitely important, 2 = Quite important, 3 = Not that important, 4 = Definitely not important. IT managers agree that the administration of consolidated information systems is less costly and less demanding.

### ***Do you believe financial directors and IT managers should monitor the same indicators when planning investments in information technology?***

When planning investments in information technology, financial directors and IT managers will evidently probably agree on the financial indicators, which are, for example, the financial demands of an investment, ROI and TCO indicators and cost savings. A minority of respondents claim that they could also agree on the non-financial indicators, such as the impact on product quality, reliability, security and risk reduction.

#### **Indicators by category**

Table 1: Assessment of spontaneous comments of both groups of respondents. The total number of respondents who provided a commentary is 106.

<b>On which indicators do the financial director and IT manager agree?</b>	<b>No. of respondents</b>
The financial director and the IT manager agree on all or almost all indicators	8
Financial demands, costs of administration and acquisition	22
ROI (Return on investment)	21
Price	5
TCO (Total cost of ownership)	5
Cost savings	5
Product quality, price	13
Productivity	8
Reliability, security, risk reduction	7
Other benefits to the company	4
EVA (Economic value added)	2
The financial director and IT manager do not agree on any indicators	6

#### **Statements**

“The financial director and the IT manager usually have to resolve a clash between the technological parameters of IT and the acquisition costs. There should be a consensus on such matters.” (financial director, heavy industry)

“First you need to agree on what the company needs, and select the technical solution with the qualitative parameters. Then there are tender proceedings with financial parameters.” (financial director, production of building materials).

“What is probably more important than the financial director’s view is that of the executive management on the introduction of an IS and improvements in IT. They have to see the savings it will bring them in the organization of work and increased productivity. It can then be translated into finance and the financial director can assess the return on the investment in the information system under consideration.” (IT manager, finance)

“There are common and different indicators. There is agreement on functionality (reliability, stability, performance), options for expansion (options of alterations in accordance with requirements...), quality of services, quality of the supplier’s software services, user friendliness and price.” (financial director, forwarding company)

# Respondents' profile I

## Breakdown by work position.

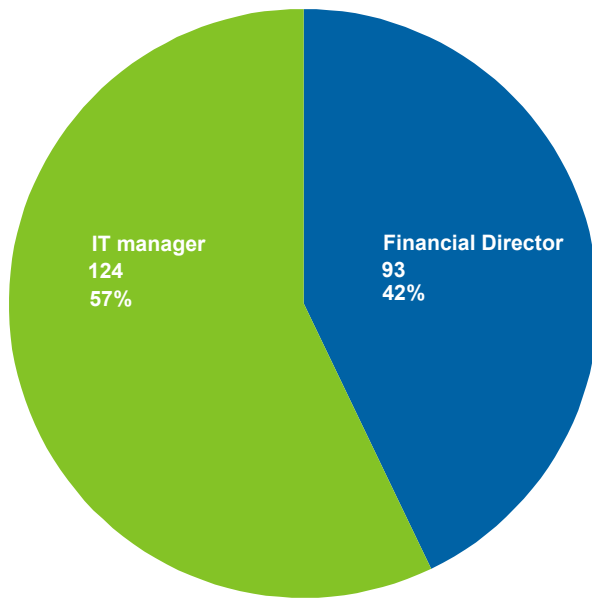


Figure 23: 124 IT managers and 93 financial directors responded in the research.

## What is your position in the company?

Financial directors

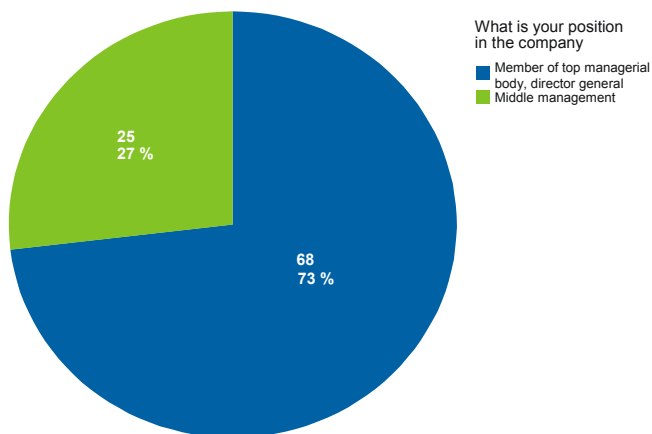


Figure 24: Most financial directors who participated in the research are also members of the highest managerial body of their company.

IT Managers

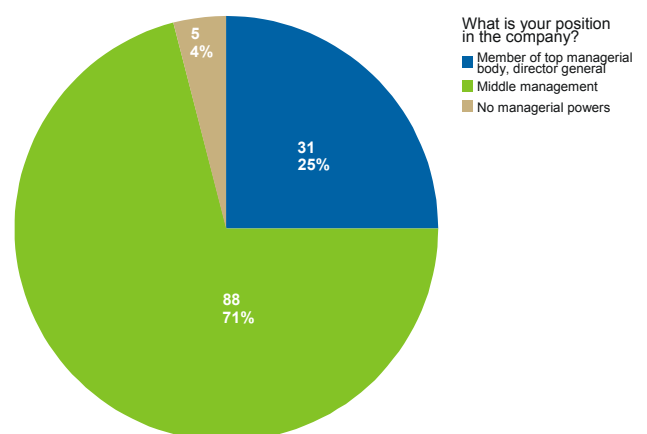


Figure 25: Most IT managers who participated in the research are part of their company's middle management.

# Respondents' profile II

## Does your company have an approved official plan for the development of information systems?

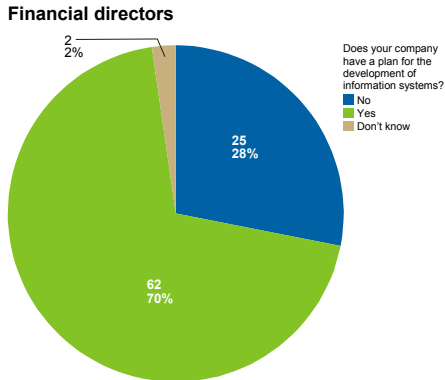


Figure 26: Most financial directors say they have an official IT systems development plan in their companies.

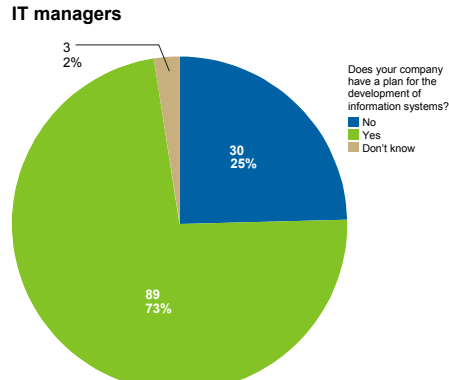


Figure 27: Most IT managers say they have an official IT systems development plan in their companies.

## To whom is the department administering information technology subordinate in your company?

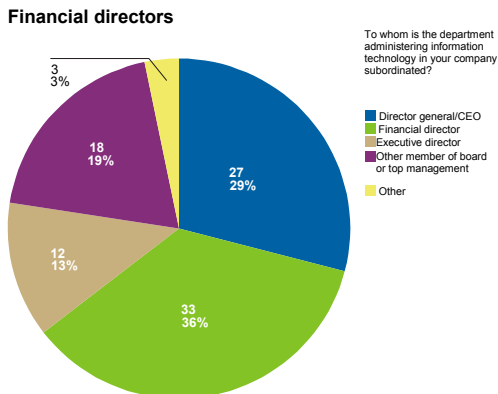


Figure 28: One-third of financial directors state that the department administering information technology in their companies is subordinate directly to the director general. Another third of financial directors state it was subordinated directly to them.

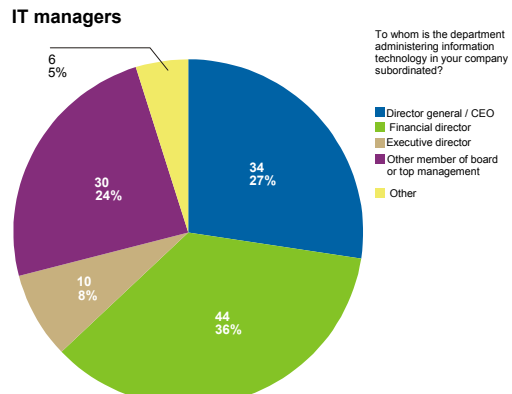


Figure 29: One-third of IT managers state that the department administering information technology in their company was subordinate to the director general. Another third of managers state that their department was under the financial director.

## Concluding information

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### ***Statistical representation***

The findings concern the group of 217 respondents, most of whom have decision-making powers in the field of planning and implementation of investments in information technology in the largest companies in the Czech Republic. For methodological reasons, it is not a representative sample of the population with professional profiles. Questions were asked in the form of a questionnaire, and each of the respondents received a personal invitation to take part. The data were gathered using an Internet questionnaire, and duplicates were removed before assessment. Systems running on a SQL platform and MS Access and SPSS software were used to gather and process the data, including evaluation.

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