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Satisfaction by enterprise software support in SMEs of Kazakhstan

Azamatov Bakhytzhan

Czech University of Life Sciences

Faculty of Economics and Management Department of Information Engineering

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Introduction

- 55 small and medium enterprises with 77 types of enterprise software were analyzed
- organizations were divided into three groups according to their service maintenance types
- the respondents were divided into two groups according to their rank
- three questions, which are an additional part of the main questionnaire were assessed.

Maintenance

Software maintenance is the process of modifying a software system or component after delivery to correct faults, improve performances or other elements, or accustom to a changed environment.

source : IEEE, 1990

- Adaptive modifying the system to cope with changes in the software environment
- Perfective implementing new or changed user requirements which concern functional enhancements to the software
- Corrective diagnosing and fixing errors, possibly ones found by users
- Preventive increasing software maintainability or reliability to prevent problems in the future

Source : Lientz, 1980

Outsourcing

Information Systems outsourcing can be defined as "the practice of turning over part or all of an organization's IS functions to external service provider(s)".

Partial – when only a few parts of the software system are contracted.

Complete - when the whole software system under development is contracted. Source : Grover, 1996

Another classification the outsourcing can be planned or ad hoc.

The planned outsourcing is a part of company strategic business plan.

The ad-hoc outsourcing can help with solving unexpected software problems.

Data tables Call statistics

Number of respondents answered	64
Number of organizations contacted	187
Average call time with participated respondents:	-00:04:03
Average time of answers after agreeing to participate in	-00:02:42
survey:	

Eleven regions out of fourteen were represented in the survey

Region	Surveyed
Astana city	8
Almaty city	20
Akmola region	1
Almaty region	7
Aktobe region	2
West Kazakhstan region	2
Zhambyl region	2
Karaganda region	11
Kostanay region	4
South Kazakhstan region	4
East Kazakhstan region	3

Data tables

Percent of surveyed respondents by industry



% in industries

% surveyed in industries

Questionnaire structure

The main questionnaire consisted of 28 questions which were divided into three groups:



Questionnaire structure

Table structure of the survey



Data processing

Software usage in SMEs



Data processing

Types of software support

Types	Description	Number of organizations	Number of software
Туре Х	With IT department or person in charge	18	31
Type Y	With contract of external support	19	27
Type Z	With not defined IT support	18	21

Groups of surveyed

	Description	Number of surveyed
Croup A	Managers	19
Group B	Employees	36

Data processing

Data of the three Types

Туре Х

Type Z

	Group A	Group B	
	Mean	Mean	
Satisfaction by software	4.31	4.06	
Understanding the software	4,38	4,19	
Efficiency of the software	4,31	4,13	
	4,33	4,13	

		Group A	Group B
		Mean	Mean
Туре Ү	Satisfaction by software	4,10	4,12
	Understanding the software	4,10	3,94
	Efficiency of the software	4,20	4,06
		4,13	4,04

	Group A	Group B	
	Mean	Mean	
Satisfaction by software	4,17	4,13	
Understanding the software	4	3,87	
Efficiency of the software	4,17	4,07	
	4,11	4,02	

Results

Results of the three Types.

M - managers, E - employees.



Results

The result of t-test for Group A and B

	T-statistics	P-value	Results
Type X	4,706789709	0,00926168	Significant
Type Y	1,52699788	0,22420248	Not significant
Type Z	0,911857756	0,413428047	Not significant



Conclusion

- The difference between three Types of support services is not significant.
- Despite the overall high ratings for the Type X, the managers (Group A) performed significantly higher rating than the employees (Group B).

Thank you for attention