APPENDIX W

Appendix W of MBA Thesis

Selection and decision-making criteria for Distributed Control Systems in the process industry Results

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Survey Overview

Instructions Provided To Respondents

To the partial fulfillment of the requirements for the Degree of Master of Business Administration in Information Management at the Newport Business Academy and Newport International University, I (Willem Hazenberg) decided to work out a research proposal with the title: 'Selection and decision-making criteria for a Distributed Control Systems in the process industry'.

The project framework

In order to control the chemical processes in the process industry, Distributed Control systems (DCS), are applied. These systems are the heart- and nerve system within the factories. The choice for DCS of a concern is a matter of strategic importance. High demands are made to the availability of a DCS and if the concern makes a choice, it is committed to it for a long period of time. Replacing a DCS is a very costly matter because of the arisen production loss at a reconstruction for example. The service costs of a DCS could be a multiple amount of the initial investment during the life span. The process industries in the world spend approximately 45.8 billion dollar per year on the top 50 suppliers on process control systems (included DCS).

Study

Define the core selection criteria and their priorities for the purchase of a Distributed Control system (DCS) in the chemical industry and design a decision-making model so that the decision-making for new systems are more balanced, more consequent and faster to be carried out.
The goals of this research is the improvement of model-based consideration, concerning a selection of a new distributed controls (DCS), by making an analysis of selected criteria within the 'Process' industry to choose a DCS and to establish an investment/ selection model with these insights/ ideas. This means that future investment can be bought faster and the decision-making will be more transparent.

The areas of the study:

- What is the Business case of your investment in a new DCS system?
- What is the reason for this investment (migration, replacement or a new installation) and what are consequences of the choice of system?
- Which DCS supplier knows the person who's task it is to purchase new systems in the company?
- Who decides whether the DCS supplier will get on the longlist for further evaluation?
- Who decides whether the DCS supplier will get on the shortlist for further evaluation?
- Which staff functions are involved in the selection?
- Of which components do these people pay attention to, and which priority do they give to the different components?
- Is there a difference between the ideas of DCS suppliers and users concerning these criteria?

Your response is put together with others to chart the results and identify best practices. Only aggregated information is published.

People who gave input to this survey can receive the results free of charge.

Respondent Metrics

Respondents : 166

First Response : 21-6-2007 07:25 AM

Last Response : 01-5-2009 10:08 AM

This colour field is out side 2 sigma limits (95%) convergence	12,5

Survey Results

The following is a tabular depiction of the responses to each survey question. Additional comments provided by respondents, if any, are included after each table.

Section - Survey filled in by information en feedback

1. Do you work for a central organization?

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Yes	**63,7**	100	63,4	64	65,6	21	88,9	8	63,6	7	12,37
No	36,3	57	36,6	37	34,4	11	11,1	1	36,4	4	12,38
Total	100	157	100	101	100	32	100	9	100	11	

2. What is your primary JOB title?

Description	Total		End user		DCS vendor		System Integrator		Engineering firm	
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS
Control engineer	31,4	49	43	43	3,1	1			38,4	5
DCS Vendor Marketing or Sales	9,0	14			43,8	14				
Process Automation manager	5,8	9	7,0	7	3,1	1				
Technology department	5,8	9	9,0	9						
System engineer	5,1	8	7,0	7			11,1	1	7,7	1
DCS vendor Account manager	3,8	6			18,8	6				
Project manager	3,8	6							15,4	2
Consultant from Head Quarter	3,2	5	5,0	5						
Maintenance manager	3,2	5			6,3	2				
System Integrator Manager	2,6	4					44,4	4		
DCS vendor Vice President	1,9	3			9.4	3				
Engineers firm	1,9	3							23,1	3
Solution provider	1,9	3	3,0	3						
DCS Product manager	1,3	2			3,1	1	11,1	1		
IT department manager	1,3	2	2,0	2						
Maintenance supervisor	1,3	2	3,0	3						
Maintenance technician	1,3	2	2,0	2						
Purchasing manager	1,3	2	2,0	2						

Description	Total		End user		DCS vendor		System Integrator		Engineering firm	
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS
System Integrator consultant	1,3	2					22,2	2		
Instrument engineer	1,3	2	1,3	2						
Sales Manager	1,3	2								
DCS Vendor Consultant	0,6	1			3,1	1				
Shift leader	0,6	1	1,0	1						
System Integrator engineer	0,6	1							7,7	1
Analyzer Maintenance Specialist	0,6	1	1,0	1						
Consultant	0,6	1	--	--	--	--	11,1	1	--	--
Development Team Lead	0,6	1								
E&I Supervisor	0,6	1	1,0	1						
Global Sales Support	0,6	1								
I&C Consultant	0,6	1								
Maintenance engineer	0,6	1	1,0	1						
Major accounts & projects manager	0,6	1								
Manager Technical Service Electro Instrumentation and Process Control	0,6	1	1,0	1						
Planning manager	0,6	1	1,0	1						
Manager Maintenance Excellence	0,6	1	1,0	1						

Comments/Notes for 'Other':
Development Team Lead
Global Sales Support (Tushar Kulkarni, Emerson Exports Engineering Centre)
Manager Technical Service Electro, Instrumentation and Process Control

Comments/Notes for 'Process Automation manager':
Control Systems Manager
Process Control and Automation Manager

Comments/Notes for 'Purchasing manager':
Purchaser

Comments/Notes for 'System Integrator Manager':
BU manager
Manager industrial automation

Comments/Notes for 'Technology department':
APC Technologist

3. Are you involved in the selection process for a DCS system?

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Yes	79,5	124	88,1	89	53,1	17	88,9	8	92,3	12	19,19
No	20,5	32	11,9	12	46,9	15	11,1	1	7,7	1	18,41
Total	100	156	75	101	100	32	100	9	100	13	

Comments/Notes for 'NO':
We are DCS vendor (4*)

4. If not could you give me your contact name in the organization?

Names and addresses are not published in the document.

5. Do you want to receive the outcomes of this study?

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Yes	93,5	144	63,4	90	91,2	31	100,0	9	92,3	12	16,03
No	6,5	10	9,1	9	8,8	3	0,0	0	7,7	1	4,31
Total	100	154	72	99	100	34	100	9	100	13	

6. If you want to receive the outcomes of this study What is your Postal Address?

Names and addresses are not published in the document.

7. What is your organization relation to DCS

Respondent organization relation to DCS	ABS	%
DCS end user	103	64,3%
DCS supplier	35	21,0%
Engineering's firm	16	7,6%
system Integrator	9	5,7%
Supplier to DCS supplier	3	1,3%
Total number of respondents	166	100%

8. I work for this DCS supplier

DCS respondent works for DCS vendor DCS	ABS	%
Honeywell	16	47,1%
Emerson	6	17,6%
Siemens	4	11,8%
Yokogawa	4	11,8%
Invensys	2	5,9%
Metso	1	2,9%
RTP Corporation	1	2,9%
Total number of respondents	166	100%

9. I work in the Industry segment (end user):

In sigma column are % out of ARC 2012 pag. 107 report.

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		ARC 2008 report
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	%
Bulk Chemicals	20,7	24	24	24							10,7
Oil & gas refining	16,4	19	15	15					57,1	4	10,8
Refining & Hydrocarbon Processing	14,0	16	15	15				1			13,6
Oil & gas exploration	10,5	12	9	9	42,9	3					
Pulp & Paper industry	9,6	11	8	8	42,9	3					9,1
Other Industry:	8,8	10	8	8	14,2	1			14,3	1	2,6
Electric Power (Generation, T&D)	7,0	8	6	6					28,6	2	24,8
Fine Chemicals	7,0	8	7,0	8							
Consumer goods	1,8	2	1,8	2							
Pharmaceutical & Cosmetics	1,8	2	1,8	2							5,8%
Cement & Glass	1,7	2	2	2							1,6%
Food en Beverage	0,9	1	0,9	1							3,1%
Water treatment	0,9	1	0,9	1							3,1%

Comments/Notes for 'Other Industry:':
Alumina Refinery & CHP Power 150MW;
Bulk & Fine Chemicals;
Internal Engineering contractor;
Industrial Gases & Chemicals;
Marine Mining;
metalliferous mining;
Petrochemicals (High and Low Poly-Ethyelen Plant);
Waste Incinerator;
Water; Refinining; Chemicals.

Comments/Notes for 'Pharmaceutical & Cosmetics':
and Fine Chemicals

Comments/Notes for 'Water treatment':
Drinking water supply

Section - Project type:

10. What was the project type and reason why you did the last DCS project?

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Green field project	**30,6**	48	24,3	25	36,4	12	11,1	1	75,0	9	27,55
Migration	24,8	39	25,2	26	36,4	12	22,2	2	16,7	2	8,29
Replacement	24,8	39	27,2	28	12,1	4	55,6	5	8,3	1	21,44
Extension	19,7	31	23,3	24	15,2	5	11,1	1	--	--	6,21
Total	100	157	100	103	100	33	100	9	100	12	

Comments/Notes for 'Extension':
incl Migration (1*)

Comments/Notes for 'Replacement':
Could be a Migrations if there was a migration Solution (1*)
Incl. Migration (1*)
Incl. Migratie and Extension (1*)

11. Project DCS size

Large (> 8 workstations, > 8 controllers, Analog I/O points 1500+, digital I/O points 800+).
Medium (3-8 workstations, 3-8 controllers, Analog I/O points 600-1499, digital I/O points 300-799).
Small (1-2 workstations, 1-2 controllers, Analog I/O points 0-599, digital I/O points 0-299).

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Large project	57,4	89	53,5	53	60,6	20	66,7	6	66,7	8	6,25
Medium	35,5	55	42,4	42	30,3	10	22,2	2	25,0	3	8,94
Small	7,1	11	4,0	4	9,1	3	11,1	1	8,3	1	2,98
Total	100	155	100	99	100	33	100	9	100	12	

Comments/Notes for 'Large(> 8 workstations, > 8 controllers, Analog I/O points 1500+, digital I/O points 800+)':
Also for small en medium (1*)

Section - Involved people in the selection process

Instructions Provided To Respondents

Which people in your company are involved in the selection process of a DCS, and what is there influence on the selection (Not /Minor/Major/Veto)?

12. Control engineer involved by longlist

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Veto	6,0	8	6,5	6	4,5	1	0,0	0	10,0	1	4,17
Major	66,9	89	69,6	64	54,5	12	62,5	5	70,0	7	7,27
Minor	15,8	21	12,0	11	27,3	6	25,0	2	20,0	2	6,79
Not	11,3	15	12,0	11	13,6	3	12,5	1	--	0	0,86
Total	100	133	100	92	100	22	100	8	100	10	

13. Control engineer involved by shortlist

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Veto	6,8	9	7,5	7	5,0	1	0,0	0	12,5	1	5,21
Major	66,9	89	73,1	68	45,0	9	62,5	5	75,0	6	13,75
Minor	20,3	27	15,1	14	35,0	7	25,0	2	12,5	1	10,27
Not	6,0	8	4,3	4	15,0	3	12,5	1	--	--	5,60
Total	100	133	100	93	100	20	100	8	100	8	

14. Control engineer involved by finallist

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Veto	10,4	14	9,8	9	4,3	1	4,3	1	33,3	4	13,83
Major	60,0	81	67,4	62	43,5	10	43,5	10	33,3	4	14,46
Minor	20,7	28	15,2	14	39,1	9	39,1	9	33,3	4	11,32
Not	8,9	12	7,6	7	13,0	3	13,0	3	--	--	3,14
Total	100	135	100	92	100	23	100	23	100	12	

15. Chief Finance Officer (CFO) involved by longlist

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Veto	5,5	7	4,7	4	9,1	2	--	--	33,3	1	15,44
Major	8,7	11	10,5	9	--	--	--	--	66,7	2	39,74
Minor	21,3	27	22,1	19	22,7	5	25,0	2	--	--	1,53
Not	64,6	82	62,8	54	68,2	15	75,0	6	--	--	6,12
Total	100	127	100	86	100	22	100	8	100	3	

16. Chief Finance Officer (CFO) involved by shortlist

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Veto	4,8	6	4,7	4	5,0	1	--	--	8,3	1	2,01
Major	10,5	13	12,9	11	--	1	--	--	16,7	2	2,63
Minor	25,0	31	20,0	17	40,0	8	28,6	2	25,0	3	8,50
Not	59,7	74	62,4	53	50,0	10	71,4	5	50,0	6	10,43
Total	100	124	100	85	95	20	100	7	100	12	

17. Chief Finance Officer (CFO) involved by finallist

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Veto	14,3	18	9,4	8	22,7	5	25,0	2	30,0	3	9,67
Major	23,0	29	22,4	19	--	6	12,5	1	20,0	2	9,36
Minor	18,3	23	20,0	17	22,7	5	12,5	1	--	--	5,30
Not	44,4	56	48,2	41	27,3	6	50,0	4	50,0	5	26,62
Total	100	126	100	85	73	22	100	8	100	10	

18. Chief Information Officer (CIO) involved by longlist

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Veto	2,3	3	1,2	1	9,1	2	--	--	--	--	5,61
Major	8,5	11	4,7	4	18,2	4	25,0	2	7,7	1	9,41
Minor	17,8	23	16,3	14	18,2	4	25,0	2	23,1	3	4,08
Not	71,3	92	77,9	67	54,5	12	50,0	4	69,2	9	12,93
Total	100	129	100	86	100	22	100	8	100	13	

19. Chief Information Officer (CIO) involved by shortlist

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Veto	3,1	4	2,3	2	9,5	2	--	--	--	--	5,11
Major	7,0	9	3,4	3	14,3	3	28,6	2	7,7	1	10,99
Minor	19,5	25	17,2	15	28,6	6	28,6	2	15,4	2	7,12
Not	70,3	90	77,0	67	47,6	10	42,9	3	76,9	10	18,42
Total	100	128	100	87	100	21	100	7	100	13	

20. Chief Information Officer (CIO) involved by finallist

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Veto	5,4	7	3,5	3	13,0	3	12,5	1	--	--	5,34
Major	14,0	18	8,2	7	30,4	7	37,5	3	10	1	14,65
Minor	16,3	21	16,5	14	17,4	4	12,5	1	20	2	3,11
Not	64,3	83	71,8	61	39,1	9	37,5	3	70	10	18,83
Total	100	129	100	85	100	23	100	8	100	13	

21. Operator involved by longlist

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Veto	0,8	1	--	--	4,5	1	--	--	--	--	0
Major	7,5	10	7,7	7	13,6	3	--	--	--	--	4,20
Minor	31,6	42	34,1	31	18,2	4	42,9	3	40	4	11,02
Not	60,2	80	58,2	53	63,6	14	57,1	4	60	9	2,84
Total	100	133	100	91	100	22	100	7	100	13	

22. Operator involved by shortlist

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Veto	1,5	2	--	--	9,1	2	--	--	--	--	0
Major	13,5	18	15,4	14	13,6	3	--	--	10	1	2,75
Minor	34,6	46	34,1	31	36,4	8	57,1	4	30	3	12,12
Not	50,4	67	50,5	46	40,9	9	42,9	3	60	9	8,68
Total	100	133	100	91	100	22	100	7	100	13	

23. Operator involved by finallist

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Veto	2,9	4	2,2	2	8,7	2	--	--	--	--	0
Major	13,1	18	14,0	13	8,7	2	14,3	1	10	1	2,82
Minor	30,7	42	32,3	30	34,8	8	14,3	1	30	3	9,24
Not	53,3	73	51,6	48	47,8	11	71,4	5	60	9	10,46
Total	100	137	100	93	100	23	100	7	100	13	

24. Quality control department involved by longlist

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Veto	0,8	1	--	--	4,8	1	--	--	--	--	0
Major	6,3	8	5,3	4,6	9,5	2	--	--	20	2	7,59
Minor	20,6	26	17,1	15	28,6	6	42,9	3	20	2	11,55
Not	72,2	91	77,6	68	57,1	12	57,1	4	60	6	9,86
Total	100	126	100	88	100	21	100	7	100	10	

25. Quality control department involved by shortlist

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Veto	0,8	1	--	--	5,0	1	--	--	--	--	0
Major	5,6	7	2,3	2	10,0	2	--	--	20	2	8,86
Minor	23,4	29	19,8	17	35,0	7	42,9	3	30	3	9,67
Not	70,2	87	77,9	67	50,0	10	57,1	4	50	5	13,20
Total	100	124	100	86	100	20	100	7	100	10	

26. Quality control department involved by finallist

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Veto	1,6	2	--	--	4,8	1	--	--	10,0	1	0
Major	6,3	8	3,4	3	9,5	2	--	--	30,0	3	13,93
Minor	19,0	24	18,2	16	14,3	3	42,9	3	20,0	2	12,91
Not	73,0	92	78,4	69	71,4	15	57,1	4	40,0	4	16,99
Total	100	126	100	88	100	21	100	7	100	10	

27. Shift leader involved by longlist

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Veto	0,8	1	--	--	5,0	1	--	--	--	--	--
Major	3,3	4	3,5	3	5,0	1	--	--	--	--	1,07
Minor	27,0	33	26,7	23	15,0	3	42,9	3	37,5	3	12,33
Not	68,9	84	69,8	60	75,0	15	57,1	4	62,5	5	7,87
Total	100	122	100	86	100	20	100	7	100	8	

28. Shift leader involved by shortlist

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Veto	0,8	1	0	0	5,0	1	--	--	--	--	--
Major	9,0	11	8,2	7	10,0	2	--	--	11,1	1	1,45
Minor	27,9	34	27,1	23	25,0	5	42,9	3	33,3	3	8,02
Not	62,3	76	64,7	55	60,0	12	57,1	4	55,6	5	4,02
Total	100	122	100	85	100	20	100	7	100	9	

29. Shift leader involved by finallist

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Veto	1,6	2	1,1	1	5,0	1	--	--	--	--	2,69
Major	10,5	13	10,3	9	10,0	2	14,3	1	--	--	2,38
Minor	20,2	25	20,7	18	15,0	3	14,3	1	33,3	3	8,82
Not	67,7	84	67,8	59	70,0	14	71,4	5	66,7	6	2,14
Total	100	124	100	87	100	20	100	7	100	9	

30. Technology department (chemicals) involved by longlist

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Veto	1,6	2	1,1	1	4,5	1	--	--	--	--	2,4
Major	23,4	30	25,0	22	13,6	3	40,0	4	11,1	1	13,18
Minor	22,7	29	21,6	19	27,3	6	20,0	2	33,3	3	6,06
Not	52,3	67	52,3	46	54,5	12	40,0	4	55,6	5	7,19
Total	100	128	100	88	100	22	100	10	100	9	

31. Technology department (chemicals) involved by shortlist

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Veto	1,6	2	1,1	1	4,5	1	--	--	--	--	2,4
Major	23,4	30	25,0	22	13,6	3	40,0	4	11,1	1	13,18
Minor	22,7	29	21,6	19	27,3	6	20,0	2	33,3	3	6,06
Not	52,3	67	52,3	46	54,5	12	40,0	4	55,6	5	7,19
Total	100	128	100	88	100	22	100	10	100	9	

32. Technology department (chemicals) involved by finallist

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Veto	1,6	2	1,1	1	4,5	1	--	--	--	--	2,4
Major	23,4	30	25,0	22	13,6	3	40,0	4	11,1	1	13,18
Minor	22,7	29	21,6	19	27,3	6	20,0	2	33,3	3	6,06
Not	52,3	67	52,3	46	54,5	12	40,0	4	55,6	5	7,19
Total	100	128	100	88	100	22	100	10	100	9	

33. purchasing manager involved by longlist

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Veto	2,3	3	2,2	2	4,8	1	--	--	--	--	1,77
Major	31,0	40	29,2	26	19,0	4	37,5	3	70,0	7	22,04
Minor	34,9	45	39,3	35	33,3	7	12,5	1	20,0	2	12,24
Not	31,8	41	29,2	26	42,9	9	50,0	4	10,0	1	17,60
Total	100	129	100	89	100	21	100	8	100	10	

engineeringcompanies think the influence of the purchasemanager far more important than other groups. It may well be that engineering companies are much more aware of costs.

34. purchasing manager involved by shortlist

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Veto	2,4	3	1,1	1	5,0	1	--	--	10,0	1	4,46
Major	42,1	53	37,5	33	55,0	11	28,6	2	60,0	6	14,73
Minor	31,0	39	38,6	34	15,0	3	14,3	1	10,0	1	12,96
Not	24,6	31	22,7	20	25,0	5	57,1	4	20,0	2	17,40
Total	100	126	100	88	100	20	100	7	100	10	

35. purchasing manager involved by finallist

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Veto	9,3	12	4,4	4	23,8	5	--	--	--	--	13,3
Major	50,4	65	53,3	48	42,9	9	42,9	3	70,0	7	12,82
Minor	21,7	28	24,4	22	19,0	4	14,3	1	10,0	1	6,22
Not	18,6	24	17,8	16	14,3	3	42,9	3	20,0	2	12,97
Total	100	129	100	90	100	21	100	7	100	10	

36. Training officer involved by longlist

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Veto	0,8	1	--	--	4,8	1	--	--	--	--	0
Major	1,6	2	2,3	2	--	--	--	--	--	--	--
Minor	14,4	18	11,5	10	14,3	3	28,6	2	33,3	3	10,67
Not	83,2	104	86,2	75	81,0	17	71,4	5	66,7	6	8,88
Total	100	125	100	87	100	21	100	7	100	9	

37. Training officer involved by shortlist

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Veto	0,8	1	--	--	4,8	1	--	--	--	--	0
Major	1,6	2	2,3	2	--	--	--	--	--	--	--
Minor	19,2	24	12,6	11	33,3	7	28,6	2	33,3	3	9,81
Not	78,4	98	85,1	74	61,9	13	71,4	5	66,7	6	9,98
Total	100	125	100	87	100	21	100	7	100	9	

38. Training officer involved by finallist

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Veto	0,8	1	--	--	4,8	1	--	--	--	--	--
Major	6,3	8	6,7	6	4,8	1	--	--	--	--	1,40
Minor	17,3	22	12,4	11	28,6	6	42,9	3	22,2	2	12,78
Not	75,6	96	80,9	72	61,9	13	57,1	4	77,8	7	11,67
Total	100	127	100	89	100	21	100	7	100	9	

39. Consultant from Head Quarter involved by longlist

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Veto	2,4	3	1,2	1	4,8	1	12,5	1	--	--	5,79
Major	38,7	48	37,6	32	47,6	10	25,0	2	44,4	4	10,02
Minor	21,0	26	17,6	15	23,8	5	50,0	4	22,2	2	14,62
Not	37,9	47	43,5	37	23,8	5	12,5	1	33,3	3	13,25
Total	100	124	100	85	100	21	100	8	100	9	

40. Consultant from Head Quarter involved by shortlist

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Veto	2,4	3	1,2	1	4,8	1	14,3	1	--	--	6,78
Major	46,3	57	41,2	35	66,7	14	42,9	3	55,6	5	11,94
Minor	16,3	20	16,5	14	9,5	2	28,6	2	11,1	1	8,63
Not	35,0	43	41,2	35	19,0	4	14,3	1	33,3	3	12,46
Total	100	123	100	85	100	21	100	7	100	9	

41. Consultant from Head Quarter involved by finallist

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Veto	8,1	10	7,0	6	9,5	2	28,6	2	--	--	11,80
Major	39,5	49	36,0	31	57,1	12	28,6	2	44,4	4	12,25
Minor	18,5	23	17,4	15	14,3	3	28,6	2	22,2	2	6,22
Not	33,9	42	39,5	34	19,0	4	14,3	1	33,3	3	11,85
Total	100	124	100	86	100	21	100	7	100	9	

42. Plant owner involved by longlist

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Veto	4,7	6	3,4	3	9,5	2	14,3	1	10,0	1	4,49
Major	31,3	40	28,1	25	57,1	12	28,6	2	70,0	7	21,01
Minor	23,4	30	23,6	21	14,3	3	28,6	2	20,0	2	6,02
Not	40,6	52	44,9	40	19,0	4	28,6	2	--	--	13,10
Total	100	128	100	89	100	21	100	7	100	10	

43. Plant owner involved by shortlist

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Veto	7,1	9	4,6	4	4,8	1	14,3	1	20,0	2	7,56
Major	36,5	46	32,2	28	28,6	6	28,6	2	60,0	6	15,21
Minor	24,6	31	28,7	25	23,8	5	28,6	2	20,0	2	4,20
Not	31,7	40	34,5	30	42,9	9	28,6	2	--	--	7,18
Total	100	126	100	87	100	21	100	7	100	10	

44. Plant owner involved by finallist

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Veto	24,8	32	16,9	15	9,5	2	71,4	5	40,0	4	27,86
Major	31,8	41	32,6	29	47,6	10	14,3	1	50,0	5	16,47
Minor	18,6	24	21,3	19	9,5	2	--	--	10,0	1	6,69
Not	24,8	32	29,2	26	33,3	7	14,3	1	--	--	10,02
Total	100	129	100	89	100	21	100	7	100	10	

45. Plant manager involved by longlist

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Veto	5,9	4	6,4	3	--	--	--	--	14,3	1	5,59
Major	17,6	12	14,9	7	22,2	2	--	--	42,9	3	14,50
Minor	33,8	23	38,3	18	22,2	2	50,0	2	14,3	1	16,03
Not	42,6	29	40,4	19	55,6	5	50,0	2	28,6	2	11,83
Total	100	68	100	47	100	9	100	4	100	7	

46. Plant manager involved by shortlist

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Veto	7,4	5	6,5	3	10,0	1	--	--	14,3	1	3,89
Major	23,5	16	21,7	10	20,0	2	25,0	1	42,9	3	10,51
Minor	30,9	21	34,8	16	20,0	2	25,0	1	14,3	1	8,69
Not	38,2	26	37,0	17	50,0	5	50,0	2	28,6	2	10,52
Total	100	68	100	46	100	10	100	4	100	7	

47. Plant manager involved by finallist

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Veto	14,7	10	13,0	6	10,0	1	50,0	2	14,3	1	18,86
Major	33,8	23	32,6	15	30,0	3	--	--	42,9	3	6,80
Minor	26,5	18	32,6	15	10,0	1	25,0	1	--	--	11,50
Not	25,0	17	21,7	10	50,0	5	25,0	1	42,9	3	13,69
Total	100	68	100	46	100	10	100	4	100	7	

48. Engineers firm involved by longlist

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Veto	2,4	3	1,1	1	5,0	1	--	--	10,0	1	4,44
Major	32,0	40	28,7	25	40,0	8	28,6	2	50,0	5	10,28
Minor	20,8	26	18,4	16	20,0	4	42,9	3	30,0	3	11,27
Not	44,8	56	51,7	45	35,0	7	28,6	2	10,0	1	17,24
Total	100	125	100	87	100	20	100	7	100	10	

49. Engineers firm involved by shortlist

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Veto	2,4	3	1,2	1	4,8	1	--	--	11,1	1	5,04
Major	30,6	38	26,7	23	42,9	9	14,3	1	55,6	5	18,09
Minor	28,2	35	26,7	23	23,8	5	57,1	4	22,2	2	16,55
Not	38,7	48	45,3	39	28,6	6	28,6	2	11,1	1	13,98
Total	100	124	100	86	100	21	100	7	100	9	

50. Engineers firm involved by finallist

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Veto	4,0	5	2,3	2	4,8	1	--	--	22,2	2	10,86
Major	30,2	38	27,6	24	42,9	9	12,5	1	44,4	4	14,97
Minor	27,8	35	26,4	23	19,0	4	62,5	5	22,2	2	20,19
Not	38,1	48	43,7	38	33,3	7	25,0	2	11,1	1	13,76
Total	100	126	100	87	100	21	100	8	100	9	

The end users see the influence of the engineeringcompanies a lot less limited than the engineeringcompanies themselves. On the other hand the DCS supplier may well think in terms of a major role for the engineeringcompanies.

51. Solution provider involved by longlist

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Veto	1,6	2	--	--	4,5	1	14,3	1	--	--	6,89
Major	22,1	27	16,7	14	45,5	10	14,3	1	25,0	2	14,17
Minor	18,9	23	16,7	14	18,2	4	57,1	4	12,5	1	20,82
Not	57,4	70	66,7	56	31,8	7	14,3	1	62,5	5	25,08
Total	100	122	100	84	100	22	100	7	100	8	

52. Solution provider involved by shortlist

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Veto	1,7	2	--	--	4,8	1	14,3	1	--	--	6,73
Major	24,0	29	19,0	16	47,6	10	14,3	1	25,0	2	14,75
Minor	19,0	23	17,9	15	14,3	3	57,1	4	12,5	1	21,25
Not	55,4	67	63,1	53	33,3	7	14,3	1	62,5	5	23,82
Total	100	121	100	84	100	21	100	7	100	8	

53. Solution provider involved by finallist

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Veto	1,6	2	--	--	4,5	1	14,3	1	--	--	6,89
Major	23,4	29	17,4	15	40,9	9	42,9	3	25,0	2	12,35
Minor	16,9	21	16,3	14	18,2	4	28,6	2	12,5	1	6,88
Not	58,1	72	66,3	57	36,4	8	14,3	1	62,5	5	24,34
Total	100	124	100	86	100	22	100	7	100	8	

System integrators consider their own role much more important than the end users and engineering companies do. On the other hand it may wel be that the DCS supplier sees a major rol for the systemintegrators.

54. EPC involved by longlist

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Veto	0,8	1	--	--	5,0	1	--	--	--	--	--
Major	21,3	26	16,7	14	30,0	6	25,0	2	44,4	4	11,66
Minor	19,7	24	17,9	15	20,0	4	37,5	3	11,1	1	11,25
Not	58,2	71	65,5	55	45,0	9	37,5	3	44,4	4	12,07
Total	100	122	100	84	100	20	100	8	100	9	

55. EPC involved by shortlist

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Veto	0,8	1	--	--	5,3	1	--	--	--	--	--
Major	26,2	32	20,5	17	42,1	8	25,0	2	55,6	5	16,14
Minor	20,5	25	18,1	15	26,3	5	37,5	3	11,1	1	11,35
Not	52,5	64	61,4	51	26,3	5	37,5	3	33,3	3	15,25
Total	100	122	100	83	100	19	100	8	100	9	

56. EPC involved by finallist

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Veto	1,7	2	--	--	4,8	1	--	--	14,3	1	6,73
Major	24,2	29	18,5	15	33,3	7	37,5	3	57,1	4	15,92
Minor	20,0	24	19,8	16	19,0	4	25,0	2	14,3	1	4,39
Not	54,2	65	61,7	50	42,9	9	37,5	3	14,3	1	19,53
Total	100	120	100	81	100	21	100	8	100	7	

57. Maintenance manager involved by longlist

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Veto	1,6	2	1,1	1	4,8	1	--	--	--	--	2,56
Major	23,8	30	23,9	21	23,8	5	37,5	3	22,2	2	7,14
Minor	38,1	48	39,8	35	28,6	6	25,0	2	44,4	4	9,17
Not	36,5	46	35,2	31	42,9	9	37,5	3	33,3	3	4,12
Total	100	126	100	88	100	21	100	8	100	9	

58. Maintenance manager involved by shortlist

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Veto	1,6	2	1,1	1	5,0	1	--	--	--	--	2,75
Major	30,7	39	35,6	32	15,0	3	28,6	2	22,2	2	8,78
Minor	39,4	50	36,7	33	40,0	8	57,1	4	44,4	4	8,97
Not	28,3	36	26,7	24	40,0	8	14,3	1	33,3	3	10,97
Total	100	127	100	90	100	20	100	7	100	9	

59. Maintenance manager involved by finallist

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Veto	6,1	8	5,4	5	4,8	1	28,6	2	--	--	13,57
Major	34,4	45	36,6	34	33,3	7	42,9	3	11,1	1	13,81
Minor	26,0	34	25,8	24	14,3	3	14,3	1	55,6	5	19,49
Not	33,6	44	32,3	30	47,6	10	14,3	1	33,3	3	13,66
Total	100	131	100	93	100	21	100	7	100	9	

60. IT department involved by longlist

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Veto	0,8	1	--	--	5,0	1	--	--	--	--	--
Major	7,0	9	6,6	6	5,0	1	12,5	1	11,1	1	3,57
Minor	27,1	35	22,0	20	35,0	7	62,5	5	33,3	3	17,20
Not	65,1	84	71,4	65	55,0	11	25,0	2	55,6	5	19,39
Total	100	129	100	91	100	20	100	8	100	9	

61. IT department involved by shortlist

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Veto	0,8	1	--	--	4,5	1	--	--	--	--	--
Major	9,3	12	8,9	8	4,5	1	42,9	3	11,1	1	17,55
Minor	29,5	38	24,4	22	45,5	10	28,6	2	33,3	3	9,09
Not	60,5	78	66,7	60	45,5	10	28,6	2	55,6	5	16,18
Total	100	129	100	90	100	22	100	7	100	9	

62. IT department involved by finallist

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Veto	2,3	3	1,1	1	4,5	1	14,3	1	--	--	--
Major	12,3	16	11,0	10	22,7	5	14,3	1	--	--	6,05
Minor	28,5	37	27,5	25	18,2	4	28,6	2	44,4	4	10,90
Not	56,9	74	60,4	55	54,5	12	42,9	3	55,6	5	7,45
Total	100	130	100	91	100	22	100	7	100	9	

This confirms that control and IT are two seperate worlds.

63. Maintenance technician involved by longlist

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Veto	1,6	2	--	--	9,5	2	--	--	--	--	--
Major	10,1	13	13,2	12	4,8	1	--	--	--	--	5,96
Minor	28,7	37	26,4	24	23,8	5	57,1	4	44,4	4	15,75
Not	59,7	77	60,4	55	61,9	13	42,9	3	55,6	5	8,66
Total	100	129	100	91	100	21	100	7	100	9	

64. Maintenance technician involved by shortlist

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Veto	0,8	1	--	--	5,9	1	--	--	--	--	--
Major	11,2	14	14,8	13	5,9	1	--	--	--	--	6,29
Minor	36,8	46	34,1	30	17,6	3	57,1	4	55,6	5	18,85
Not	51,2	64	51,1	45	70,6	12	42,9	3	44,4	4	12,74
Total	100	125	100	88	100	17	100	7	100	9	

65. Maintenance technician involved by finallist

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Veto	0,8	1	--	--	4,8	1	--	--	--	--	--
Major	14,8	19	18,9	17	4,8	1	--	--	--	--	9,99
Minor	28,9	37	27,8	25	19,0	4	57,1	4	44,4	4	17,01
Not	55,5	71	53,3	48	71,4	15	42,9	3	55,6	5	11,80
Total	100	128	100	90	100	21	100	7	100	9	

66. Project manager involved by longlist

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Veto	5,7	3	9,1	3	--	--	--	--	--	--	--
Major	24,5	13	21,2	7	44,4	4	50,0	1	12,5	1	18,03
Minor	24,5	13	24,2	8	33,3	3	--	--	25,0	2	5,04
Not	45,3	24	45,5	15	22,2	2	50,0	1	62,5	5	16,84
Total	100	53	100	33	100	9	100	2	100	8	

67. Project manager involved by shortlist

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Veto	5,7	3	9,1	3	--	--	--	--	--	--	--
Major	39,6	21	39,4	13	44,4	4	50,0	1	37,5	3	5,60
Minor	22,6	12	21,2	7	33,3	3	--	--	12,5	1	10,46
Not	32,1	17	30,3	10	22,2	2	50,0	1	50,0	4	14,10
Total	100	53	100	33	100	9	100	2	100	8	

68. Project manager involved by finallist

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Veto	10,9	6	11,4	4	--	--	50,0	1	12,5	1	--
Major	47,3	26	48,6	17	66,7	6	--	--	25,0	2	20,89
Minor	14,5	8	14,3	5	11,1	1	--	--	25,0	2	7,28
Not	27,3	15	25,7	9	22,2	2	50,0	1	37,5	3	12,59
Total	100	55	100	35	100	9	100	2	100	8	

69. Others involved by longlist

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Veto	0,9	1	--	--	5,3	1	--	--	--	--	--
Major	5,6	6	6,7	5	--	--	--	--	16,7	1	7,07
Minor	16,8	18	13,3	10	21,1	4	28,6	2	33,3	2	8,76
Not	76,6	82	80,0	60	73,7	14	71,4	5	50,0	3	13,03
Total	100	107	100	75	100	19	100	7	100	6	

Comments/Notes for 'Major':
Reliability Engineer

70. Others involved by shortlist

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Veto	0,9	1	--	--	5,3	1	--	--	--	--	--
Major	8,4	9	10,4	8	--	--	--	--	16,7	1	4,44
Minor	15,9	17	10,4	8	26,3	5	40,0	2	33,3	2	12,71
Not	74,8	80	79,2	61	68,4	13	60,0	3	50,0	3	12,42
Total	100	107	100	77	100	19	100	5	100	6	

Comments/Notes for 'Major':
Reliability Engineer

71. Others involved by finallist

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Veto	1,9	2	1,3	1	5,3	1	--	--	--	--	--
Major	9,4	10	9,2	7	5,3	1	20,0	1	16,7	1	6,74
Minor	19,8	21	15,8	12	26,3	5	40,0	2	33,3	2	10,35
Not	68,9	73	73,7	56	63,2	12	40,0	2	50,0	3	14,76
Total	100	106	100	76	100	19	100	5	100	6	

Comments/Notes for 'Major':
Reliability Engineer

Total Involvement Rating actors on job title

To estimate the influence of the official the 'Total Involvement Rating (TIR)' is esthablished and specified, this TIR is build up with the following formula:
The sum of (Minor x 1) + (Major x 3) + (Veto x 5).

Job Title	Longlist (From end user opinion)					
	nr. Resp.	Not	Minor	Major	Veto	total involvement rating
Control Engineer	94	11,7%	12,8%	69,1%	6,4%	2,52
Consultant from HQ	87	42,5%	17,2%	39,1%	1,1%	1,40
Purchasing manager	91	29,7%	38,5%	29,7%	2,2%	1,38
Project manager	35	42,9%	25,7%	22,9%	8,6%	1,37
Plant owner	91	46,2%	23,1%	27,5%	3,3%	1,22
Plant manager	49	38,8%	38,8%	16,3%	6,1%	1,18
Maintenance manager	90	35,6%	38,9%	24,4%	1,1%	1,18
Engineering firm	89	51,7%	19,1%	28,1%	1,1%	1,09
Technology department (Chemicals)	90	52,2%	22,2%	24,4%	1,1%	1,01
Chief Finance Officer CFO	88	62,5%	21,6%	11,4%	4,5%	0,78
EPC	86	65,1%	17,4%	17,4%	0,0%	0,70
Maintenance technician	93	59,1%	28,0%	12,9%	0,0%	0,67
Solution provider	85	67,1%	16,5%	16,5%	0,0%	0,66
Operator	91	58,2%	34,1%	7,7%	0,0%	0,57
IT department	93	72,0%	21,5%	6,5%	0,0%	0,41
Shift leader	88	68,2%	28,4%	3,4%	0,0%	0,39
Chief Information Officer CIO	86	77,9%	16,3%	4,7%	1,2%	0,36
Others	77	77,9%	13,0%	6,5%	0,0%	0,32
Quality control department	89	77,5%	18,0%	4,5%	0,0%	0,31
Training officer	89	86,5%	11,2%	2,2%	0,0%	0,18

Job Title	Longlist (From DCS vendor opinion)					
	nr. Resp.	Not	Minor	Major	Veto	total involvement rating
Control Engineer	23	13,04%	30,43%	52,17%	4,35%	2,09
Consultant from HQ	22	22,7%	22,7%	50,0%	4,5%	1,95
Solution provider	23	30,4%	17,4%	47,8%	4,3%	1,83
Engineering firm	21	33,3%	19,0%	42,9%	4,8%	1,71
Project manager	10	20,0%	40,0%	40,0%	0,0%	1,60
EPC	21	42,9%	19,0%	33,3%	4,8%	1,43
Plant Owner	22	40,9%	22,7%	31,8%	4,5%	1,41
Maintenance manager	22	40,9%	27,3%	27,3%	4,5%	1,32
Plant manager	10	50,0%	20,0%	20,0%	10,0%	1,30
Purchasing manager	22	40,9%	31,8%	22,7%	4,5%	1,23
Chief Information Officer CIO	22	54,5%	18,2%	18,2%	9,1%	1,18
Technology department (Chemicals)	23	52,2%	26,1%	17,4%	4,3%	1,00
Maintenance technician	22	59,1%	22,7%	9,1%	9,1%	0,95
Quality control department	22	54,5%	27,3%	13,6%	4,5%	0,91
IT department	21	52,4%	33,3%	9,5%	4,8%	0,86
Operator	22	63,6%	18,2%	13,6%	4,5%	0,82
Others	20	70,0%	20,0%	5,0%	5,0%	0,60
Shift leader	21	71,4%	19,0%	4,8%	4,8%	0,57
Chief Finance Officer CFO	23	65,2%	26,1%	8,7%	0,0%	0,52
Training officer	22	77,3%	13,6%	9,1%	0,0%	0,41

Job Title	Longlist (From end user opinion)						
	nr. Resp.	Not	Minor	Major	Veto	Total Involvement Rating (User RATING)	Total Involvement Rating (DCS Vendor RATING)
Control Engineer	94	11,7%	12,8%	69,1%	6,4%	2,52	2,09
Consultant from HQ	87	42,5%	17,2%	39,1%	1,1%	1,40	1,95
Purchasing manager	91	29,7%	38,5%	29,7%	2,2%	1,38	1,23
Project manager	35	42,9%	25,7%	22,9%	8,6%	1,37	1,60
Plant owner	91	46,2%	23,1%	27,5%	3,3%	1,22	1,41
Plant manager	49	38,8%	38,8%	16,3%	6,1%	1,18	1,30
Maintenance manager	90	35,6%	38,9%	24,4%	1,1%	1,18	1,32
Engineering firm	89	51,7%	19,1%	28,1%	1,1%	1,09	1,71
Technology department (Chemicals)	90	52,2%	22,2%	24,4%	1,1%	1,01	1,00
Chief Finance Officer CFO	88	62,5%	21,6%	11,4%	4,5%	0,78	0,52
EPC	86	65,1%	17,4%	17,4%	0,0%	0,70	1,43
Maintenance technician	93	59,1%	28,0%	12,9%	0,0%	0,67	0,95
Solution provider	85	67,1%	16,5%	16,5%	0,0%	0,66	1,83
Operator	91	58,2%	34,1%	7,7%	0,0%	0,57	0,82
IT department	93	72,0%	21,5%	6,5%	0,0%	0,41	0,57
Shift leader	88	68,2%	28,4%	3,4%	0,0%	0,39	0,57
Chief Information Officer CIO	86	77,9%	16,3%	4,7%	1,2%	0,36	1,18
Others	77	77,9%	13,0%	6,5%	0,0%	0,32	0,60
Quality control department	89	77,5%	18,0%	4,5%	0,0%	0,31	0,91
Training officer	89	86,5%	11,2%	2,2%	0,0%	0,18	0,41

Above table offers the possibily to compare the judgment of an end user to the judgment of the DCS supplier by means of the TIR index. Striking is the influence of the solution provider, while the end user thinks little of this influence. As well as the end user the DCS supplier sees the role of the control engineer as the most important, and with the most influence in the longlist fase.

Job Title	Shortlist (From end user opinion)					
	nr. Resp.	Not	Minor	Major	Veto	Total Involvement Rating
Control Engineer	95	4,2%	15,8%	72,6%	7,4%	2,71
Project manager	35	28,6%	22,9%	40,0%	8,6%	1,86
Purchasing manager	90	23,3%	37,8%	37,8%	1,1%	1,57
Consultant From HQ	87	40,2%	16,1%	42,5%	1,1%	1,49
Maintenance manager	92	27,2%	35,9%	35,9%	1,1%	1,49
Plant owner	89	36,0%	28,1%	31,5%	4,5%	1,45
Plant manager	48	35,4%	35,4%	22,9%	6,3%	1,35
Engineering firm	88	45,5%	27,3%	26,1%	1,1%	1,11
Technology department (Chemicals)	88	48,9%	22,7%	27,3%	1,1%	1,10
Chief Finance Officer CFO	87	62,1%	19,5%	13,8%	4,6%	0,84
EPC	85	61,2%	17,6%	20,0%	1,2%	0,84
Operator	91	50,5%	34,1%	15,4%	0,0%	0,80
Maintenance technician	90	50,0%	35,6%	14,4%	0,0%	0,79
Solution provider	86	62,8%	18,6%	18,6%	0,0%	0,74
Shift leader	87	63,2%	28,7%	8,0%	0,0%	0,53
IT department	92	67,4%	23,9%	8,7%	0,0%	0,50
Others	79	79,7%	10,1%	10,1%	0,0%	0,41
Chief Information Officer CIO	87	77,0%	17,2%	3,4%	2,3%	0,39
Quality control department	88	77,3%	20,5%	2,3%	0,0%	0,27
Training officer	89	85,4%	12,4%	2,2%	0,0%	0,19

Job Title	Finallist (From end user opinion)					
	nr. Resp.	Not	Minor	Major	Veto	Total Involvement Rating
Control Engineer	94	7,4%	17,0%	66,0%	9,6%	2,63
Project manager	36	25,0%	16,7%	47,2%	11,1%	2,14
Purchasing manager	92	18,5%	23,9%	53,3%	4,3%	2,05
Plant owner	91	30,8%	20,9%	31,9%	16,5%	1,99
Plant manager	49	20,4%	34,7%	30,6%	12,2%	1,88
Maintenance manager	95	32,6%	25,3%	36,8%	5,3%	1,62
Consultant From HQ	88	39,8%	17,0%	36,4%	6,8%	1,60
Chief Finance Officer CFO	87	48,3%	19,5%	23,0%	9,2%	1,34
Engineering firm	89	44,9%	25,8%	27,0%	2,2%	1,18
Technology department (Chemicals)	92	43,5%	30,4%	25,0%	1,1%	1,11
Operator	93	51,6%	32,3%	14,0%	2,2%	0,85
Maintenance technician	92	52,2%	29,3%	18,5%	0,0%	0,85
EPC	82	62,2%	19,5%	18,3%	0,0%	0,74
Solution provider	88	65,9%	15,9%	18,2%	0,0%	0,70
IT department	93	61,3%	26,9%	10,8%	1,1%	0,65
Chief Information Officer CIO	85	71,8%	16,5%	8,2%	3,5%	0,59
Shift leader	89	67,4%	21,3%	10,1%	1,1%	0,57
Others	79	73,4%	15,2%	10,1%	1,3%	0,52
Training officer	91	81,3%	12,1%	6,6%	0,0%	0,32
Quality control department	90	78,9%	17,8%	3,3%	0,0%	0,28

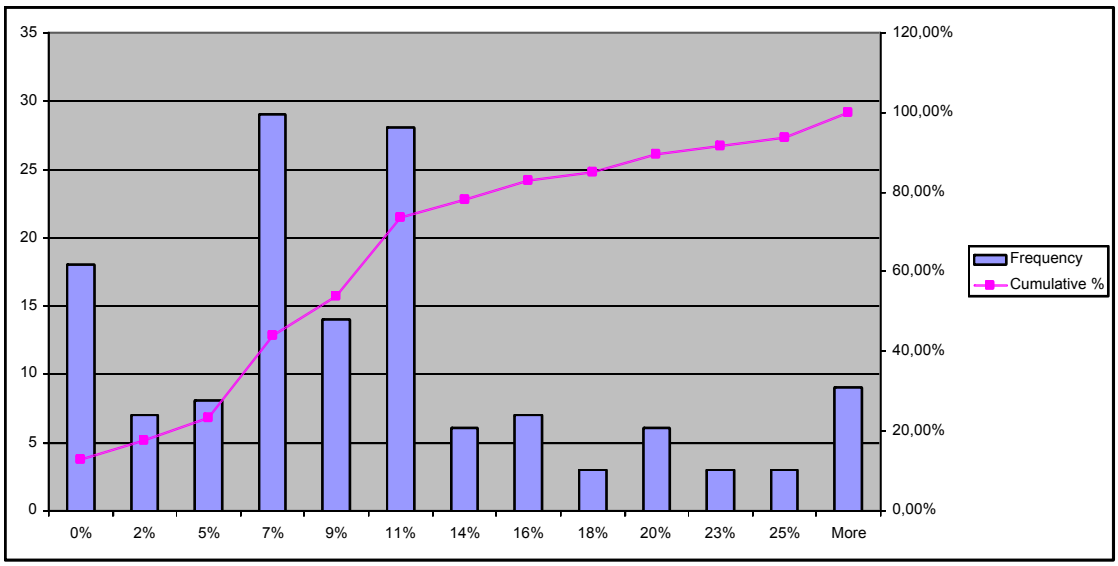
Section - Overall supplier evaluation distribution Max. 100%

Instructions Provided To Respondents

Please distribute up to 100 points (total sum should be 100%)

72. Business case Importance in % of total evaluation.

Survey group/ Average score	Business case guarantee	N
All respondents	9,34%	138
End Users	8,97%	88
DCS vendor	10,4%	28
System integrators	13,9%	7
Engineer firm	7,45%	14
Vendor to DCS vendor	7,21%	1
Minimum	7,2%	
Maximum	13,9%	
Median	9,0%	
Standard deviation	2,75%	

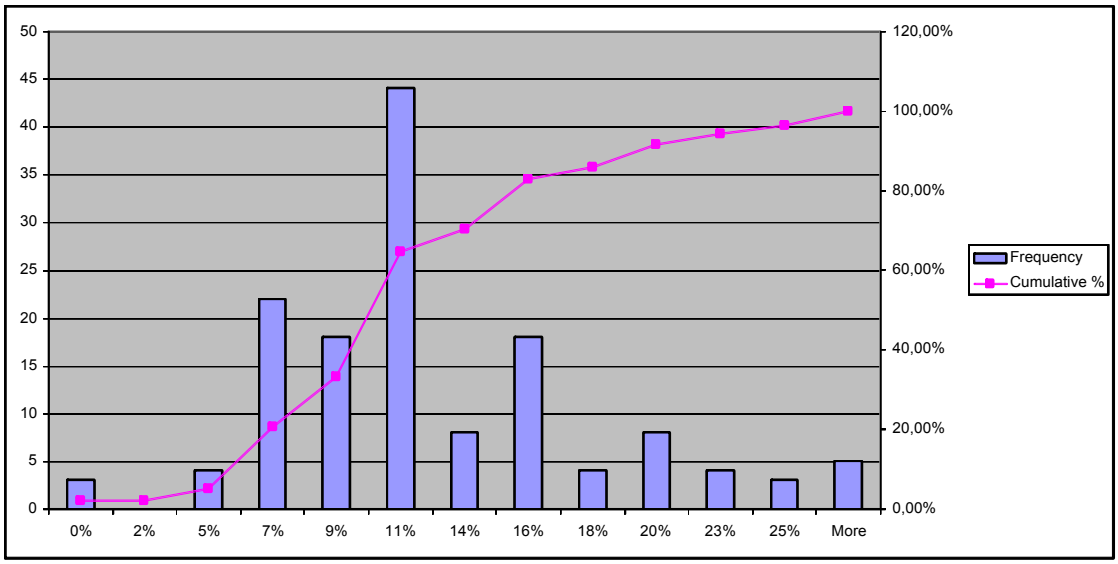


Project type	Mean	N
Extension	9,16	26
Green field project	10,22	47
Migration	9,81	39
Replacement	8,46	33
total all projects	9,52	145

Business case guarantee statistics	
Mean	9,14%
Standard Error	0,61%
Median	7,63%
Mode	0,00%
Standard Deviation	7,19%
Sample Variance	0,52%
Kurtosis	4,10%
Skewness	86,56%
Range	27,10%
Minimum	0,00%
Maximum	27,10%
Sum	1288,52%
Count	141
Largest(1)	27,10%
Smallest(1)	0,00%
Confidence Level (95,0%)	1,20%

73. Functionality --Seamless integration between all control functions, integrated support, Industry-specific application templates and industry process flows. Importance in % of total evaluation.

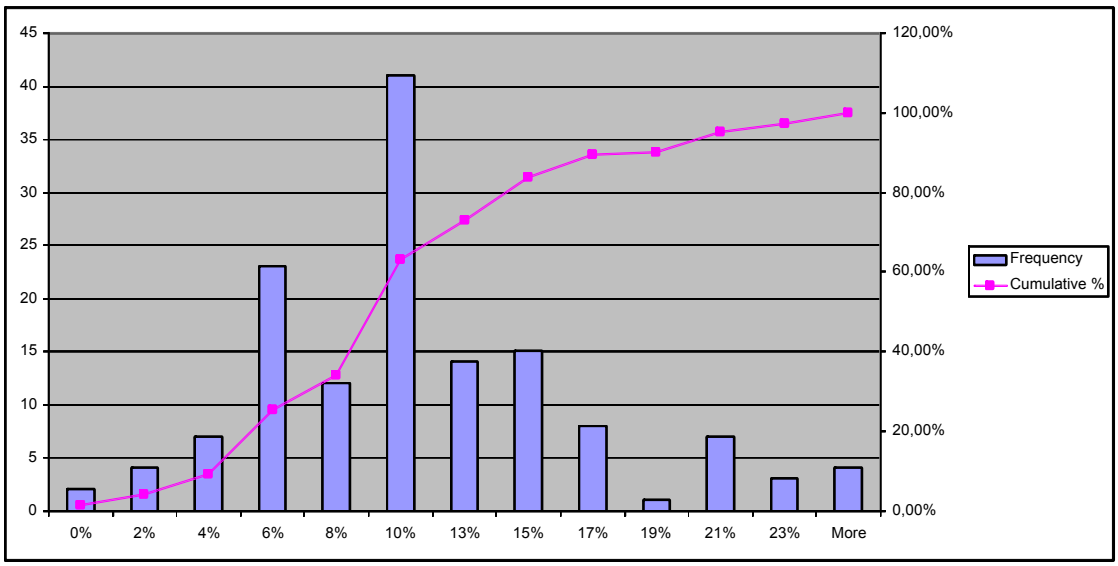
Survey group/ Average score	Functionality	N
All respondents	11,50%	138
End Users	11,56%	88
DCS vendor	10,1%	28
System integrators	15,4%	7
Engineer firm	12,00%	14
Vendor to DCS vendor	9,01%	1
Minimum	9,0%	
Maximum	15,4%	
Median	11,6%	
Standard deviation	2,44%	



Functionality Statistics	
Mean	11,25%
Standard Error	0,47%
Median	10,00%
Mode	10,00%
Standard Deviation	5,60%
Sample Variance	0,31%
Kurtosis	33,79%
Skewness	76,45%
Range	27,10%
Minimum	0,00%
Maximum	27,10%
Sum	1586,61%
Count	141
Largest (1)	27,10%
Smallest (1)	0,00%
Confidence Level (95,0%)	0,93%

74. Technology - Easy to use, simple to maintain. Effective user interface. Easy to integrate. Importance in % of total evaluation.

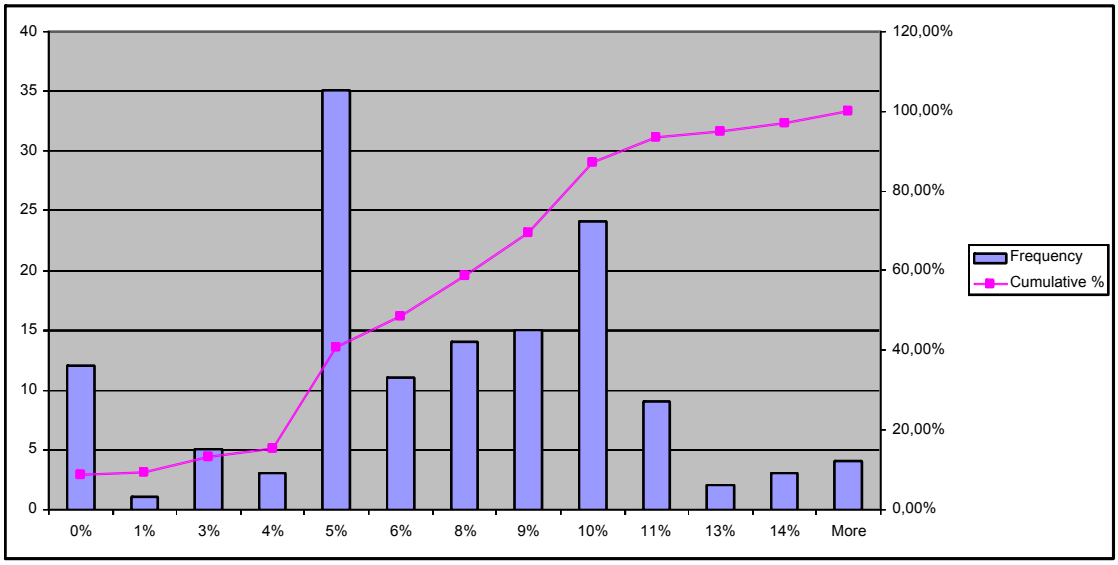
Survey group/ Average score	Technology	N
All respondents	10,42%	138
End Users	10,73%	88
DCS vendor	9,7%	28
System integrators	11,3%	7
Engineer firm	9,26%	14
Vendor to DCS vendor	13,51%	1
Minimum	9,3%	
Maximum	13,5%	
Median	10,7%	
Standard deviation	1,66%	



Technology Statistics	
Mean	10,19%
Standard Error	0,45%
Median	10,00%
Mode	10,00%
Standard Deviation	5,29%
Sample Variance	0,28%
Kurtosis	55,63%
Skewness	74,76%
Range	25,00%
Minimum	0,00%
Maximum	25,00%
Sum	1437,16%
Count	141
Largest (1)	25,00%
Smallest (1)	0,00%
Confidence Level (95,0%)	0,88%

75. Interoperability - To other systems outside the DCS. Importance in % of total evaluation.

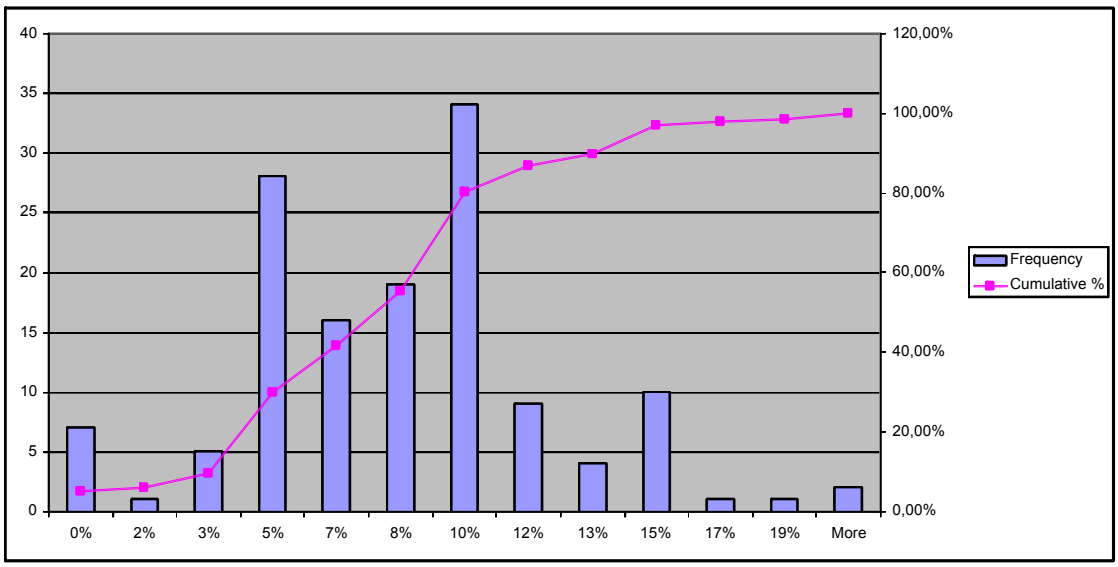
Survey group/ Average score	Interoperability	N
All respondents	6,88%	138
End Users	7,38%	88
DCS vendor	5,5%	28
System integrators	5,0%	7
Engineer firm	7,11%	14
Vendor to DCS vendor	10,81%	1
Minimum	5,0%	
Maximum	10,8%	
Median	7,1%	
Standard deviation	2,30%	



Interoperability statistics	
Mean	6,73%
Standard Error	0,30%
Median	6,68%
Mode	0,00%
Standard Deviation	3,57%
Sample Variance	0,13%
Kurtosis	-28,48%
Skewness	-1,55%
Range	15,27%
Minimum	0,00%
Maximum	15,27%
Sum	929,19%
Count	138
Largest (1)	15,27%
Smallest (1)	0,00%
Confidence Level (95,0%)	0,60%

76. Implementation process - Quick implementation focus. The user should choose a DCS vendor that uses experienced engineers, consultants, project management and a proven method to ensure quick implementation. Importance in % of total evaluation.

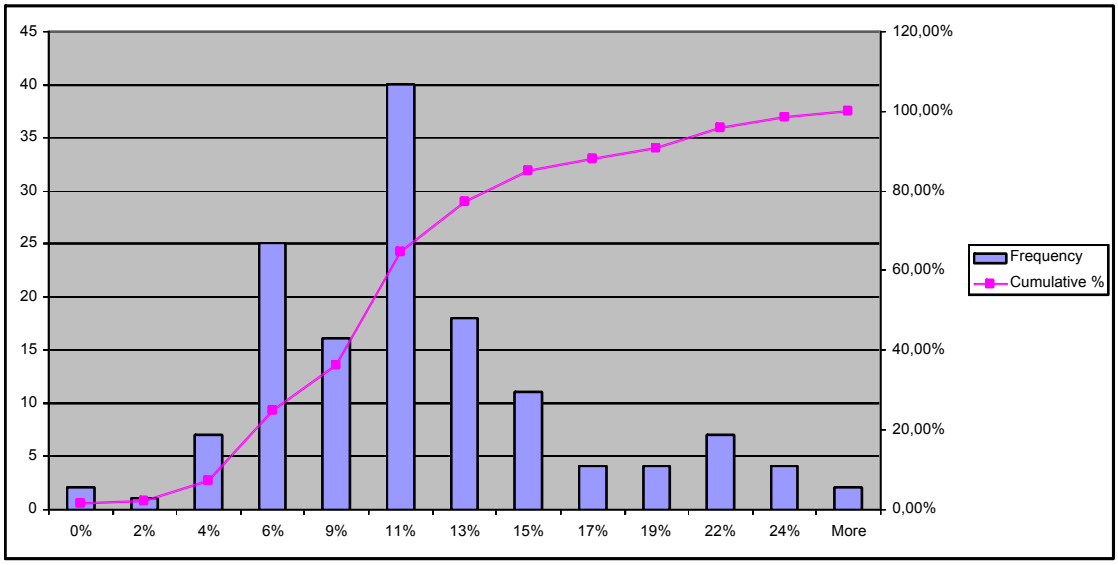
Survey group/ Average score	Implementation	N
All respondents	8,08%	138
End Users	7,91%	88
DCS vendor	7,8%	28
System integrators	9,3%	7
Engineer firm	7,99%	14
Vendor to DCS vendor	3,60%	1
Minimum	3,6%	
Maximum	9,3%	
Median	7,9%	
Standard deviation	2,16%	



Implementation statistics	
Mean	7,90%
Standard Error	0,34%
Median	7,56%
Mode	10,00%
Standard Deviation	4,03%
Sample Variance	0,16%
Kurtosis	45,66%
Skewness	40,40%
Range	20,22%
Minimum	0,00%
Maximum	20,22%
Sum	1082,47%
Count	137
Largest (1)	20,22%
Smallest (1)	0,00%
Confidence Level (95,0%)	0,68%

77. Service and Support - Post-purchase support. Users should favour vendors that provide superior post-purchase user services such as responsive phone support, quality documentation (online and printed), online user-group discussions and web sites with diagnostic applications. Low-hassle life cycle management. Users should choose vendors with a track record of providing timely, easy-to-install upgrades with reasonable additions of new functionality and few 'bugs. Importance in % of total evaluation.

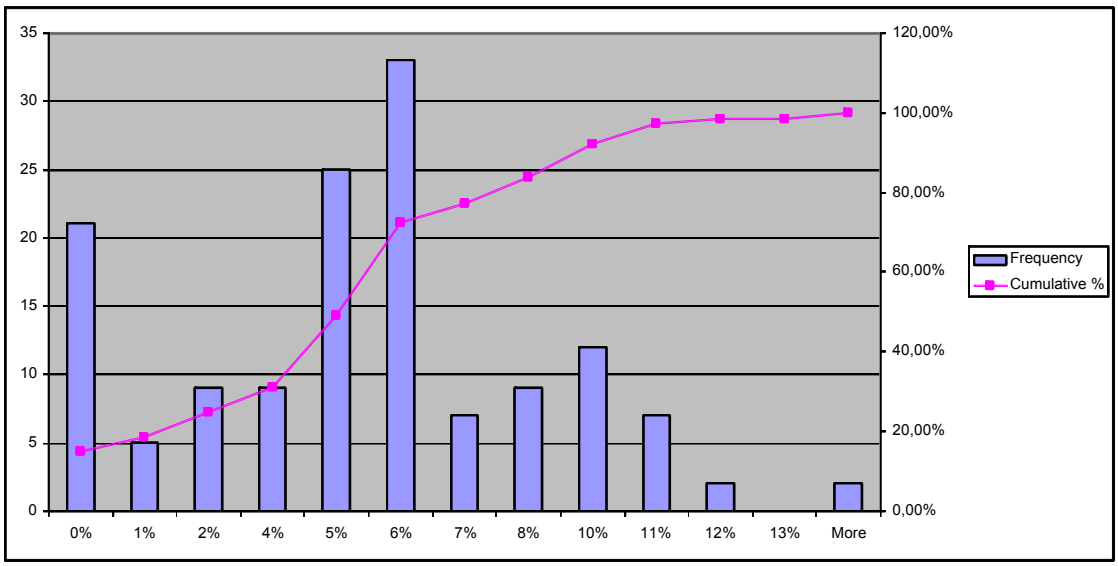
Survey group/ Average score	Service and support	N
All respondents	10,57%	138
End Users	10,65%	88
DCS vendor	11,1%	28
System integrators	8,7%	7
Engineer firm	9,89%	14
Vendor to DCS vendor	2,70%	1
Minimum	2,7%	
Maximum	11,1%	
Median	9,9%	
Standard deviation	3,42%	



Service and support statistics	
Mean	10,34%
Standard Error	0,43%
Median	10,00%
Mode	10,00%
Standard Deviation	5,12%
Sample Variance	0,26%
Kurtosis	52,34%
Skewness	77,16%
Range	25,96%
Minimum	0,00%
Maximum	25,96%
Sum	1457,70%
Count	141
Largest (1)	25,96%
Smallest (1)	0,00%
Confidence Level (95,0%)	0,85%

78. Training - Vendor training given to operators, maintenance and engineers. Importance in % of total evaluation.

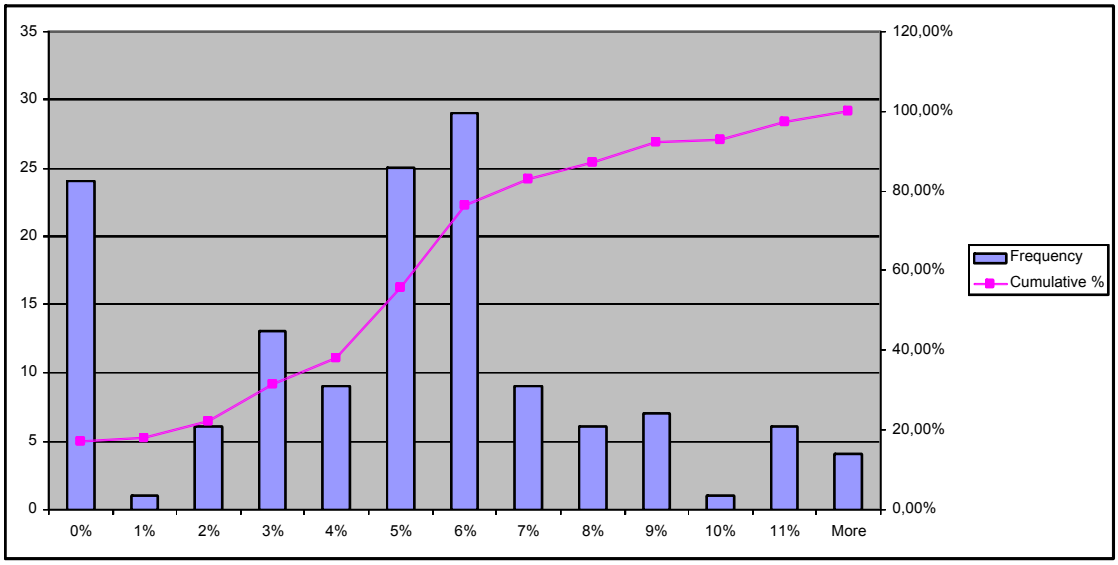
Survey group/ Average score	Training	N
All respondents	4,86%	138
End Users	4,81%	88
DCS vendor	4,7%	28
System integrators	4,2%	7
Engineer firm	4,91%	14
Vendor to DCS vendor	10,81%	1
Minimum	4,2%	
Maximum	10,8%	
Median	4,8%	
Standard deviation	2,77%	



Training statistics	
Mean	4,76%
Standard Error	0,27%
Median	5,00%
Mode	0,00%
Standard Deviation	3,18%
Sample Variance	0,10%
Kurtosis	2,85%
Skewness	38,16%
Range	14,41%
Minimum	0,00%
Maximum	14,41%
Sum	670,86%
Count	141
Largest (1)	14,41%
Smallest (1)	0,00%
Confidence Level (95,0%)	0,53%

79. Documentation - All standard and custom documentation (on paper and Online) of the project and it interconnections. Importance in % of total evaluation.

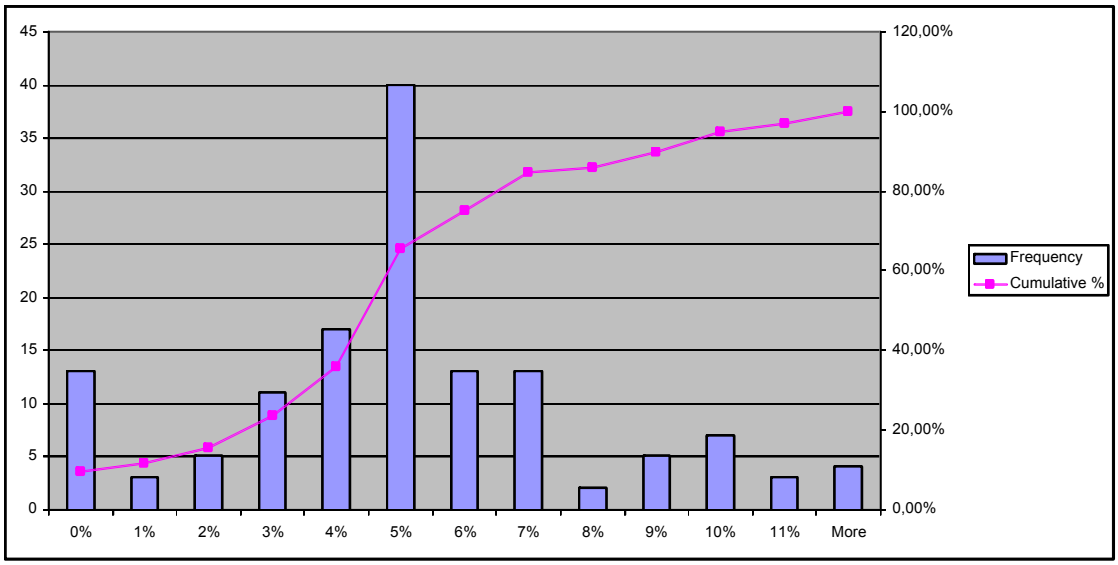
Survey group/ Average score	Documentation	N
All respondents	4,39%	138
End Users	4,38%	88
DCS vendor	3,9%	28
System integrators	3,2%	7
Engineer firm	6,24%	14
Vendor to DCS vendor	0,00%	1
Minimum	0,0%	
Maximum	6,2%	
Median	3,9%	
Standard deviation	2,28%	



Documentation statistics	
Mean	4,30%
Standard Error	0,25%
Median	4,61%
Mode	0,00%
Standard Deviation	3,00%
Sample Variance	0,09%
Kurtosis	-33,25%
Skewness	33,72%
Range	11,76%
Minimum	0,00%
Maximum	11,76%
Sum	601,95%
Count	140
Largest (1)	11,76%
Smallest (1)	0,00%
Confidence Level (95,0%)	0,50%

80. Viability - Strategy, Strong financial's, marketing and good management. Vendors rating high in viability have plenty of cash to spend on R&D and sales and marketing. Rapid growth. Importance in % of total evaluation.

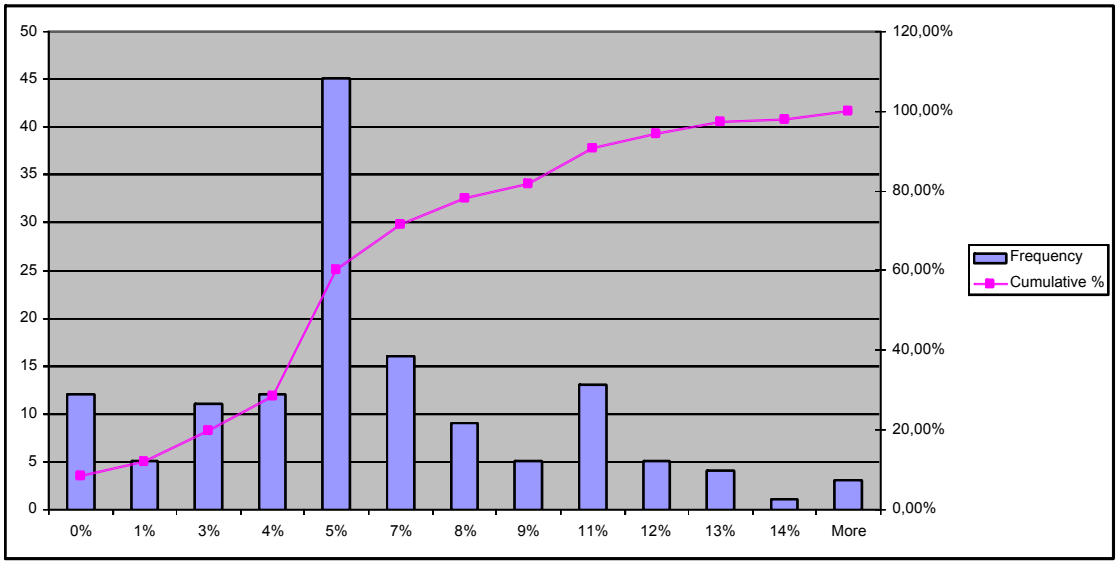
Survey group/ Average score	Viability	N
All respondents	5,05%	138
End Users	5,16%	88
DCS vendor	5,2%	28
System integrators	3,9%	7
Engineer firm	4,27%	14
Vendor to DCS vendor	10,81%	1
Minimum	3,9%	
Maximum	10,8%	
Median	5,2%	
Standard deviation	2,83%	



Viability statistics	
Mean	4,94%
Standard Error	0,25%
Median	5,00%
Mode	0,00%
Standard Deviation	2,87%
Sample Variance	0,08%
Kurtosis	20,25%
Skewness	39,52%
Range	12,50%
Minimum	0,00%
Maximum	12,50%
Sum	672,30%
Count	136
Largest (1)	12,50%
Smallest (1)	0,00%
Confidence Level (95,0%)	0,49%

81. Vision - Future market focus. To be truly visionary, a vendor has to tie together all the characteristics the industry needs. The vendor evaluations model and integrates the criteria into an achievable, cohesive, targeted and focused business plan with a palatable message. Importance in % of total evaluation.

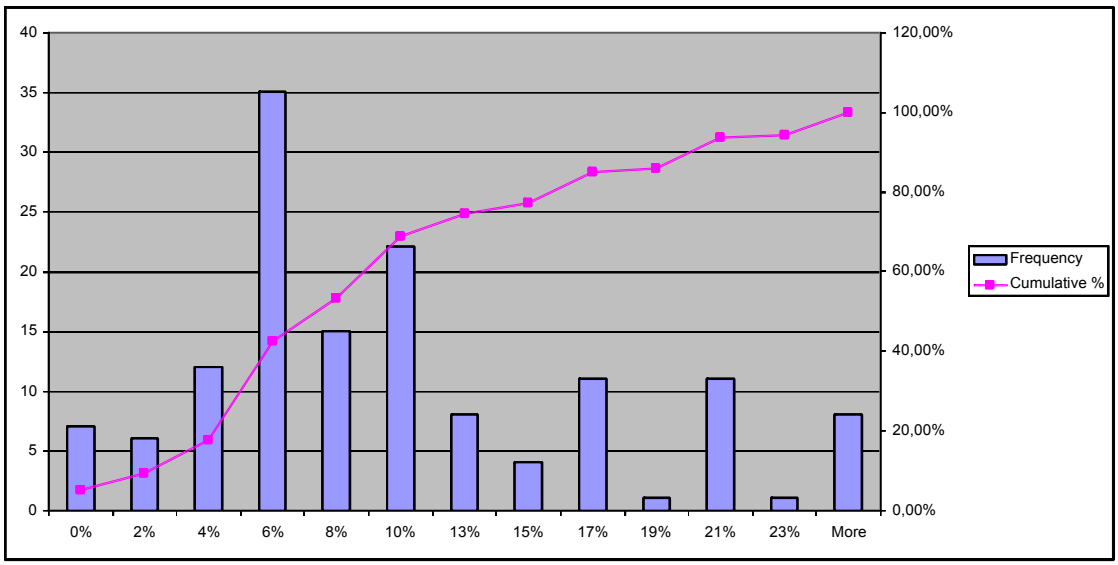
Survey group/ Average score	Vision	N
All respondents	5,56%	138
End Users	5,58%	88
DCS vendor	6,0%	28
System integrators	4,8%	7
Engineer firm	4,94%	14
Vendor to DCS vendor	6,31%	1
Minimum	4,8%	
Maximum	6,3%	
Median	5,6%	
Standard deviation	0,67%	



Vision statistics	
Mean	5,44%
Standard Error	0,30%
Median	5,00%
Mode	0,00%
Standard Deviation	3,50%
Sample Variance	0,12%
Kurtosis	33,87%
Skewness	68,88%
Range	15,77%
Minimum	0,00%
Maximum	15,77%
Sum	767,59%
Count	141
Largest (1)	15,77%
Smallest (1)	0,00%
Confidence Level (95,0%)	0,58%

82. Initial costs - Initial costs include customization and consulting, education and training, managing the implementation of the product into the business. Hardware, networking, communications and software (comprising the application package, database, systems software, network management and other software needed to run the product). Users also need to gain an appreciation for the process changes that must occur up front to make the system work. Importance in % of total evaluation.

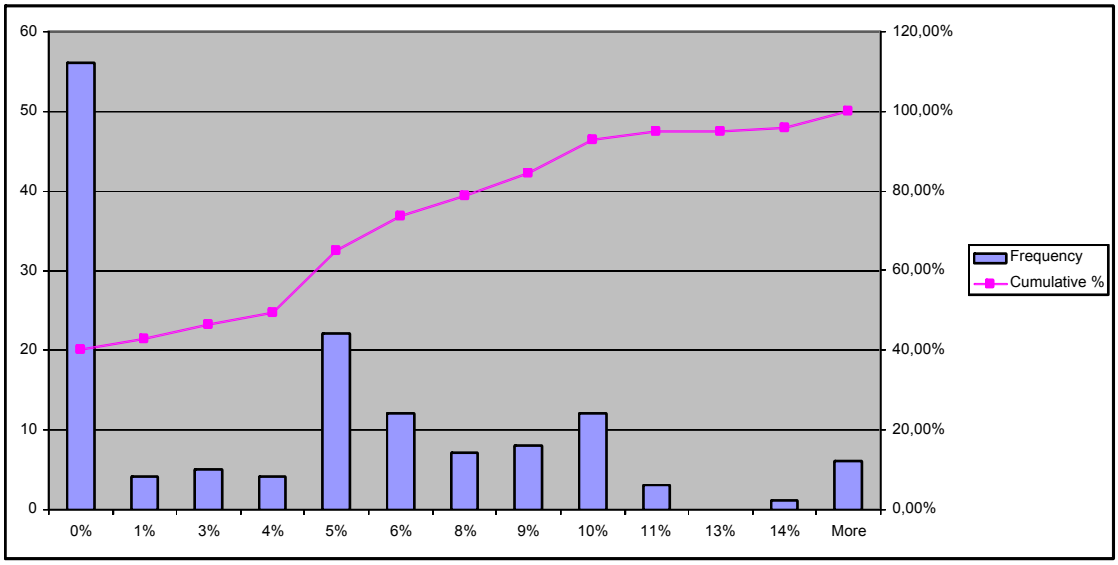
Survey group/ Average score	Initial costs	N
All respondents	9,57%	138
End Users	9,69%	88
DCS vendor	10,5%	28
System integrators	6,8%	7
Engineer firm	7,79%	14
Vendor to DCS vendor	3,60%	1
Minimum	3,6%	
Maximum	10,5%	
Median	7,8%	
Standard deviation	2,70%	



Initial costss statistics	
Mean	9,36%
Standard Error	0,56%
Median	7,58%
Mode	0,00%
Standard Deviation	6,61%
Sample Variance	0,44%
Kurtosis	-3,74%
Skewness	87,58%
Range	25,00%
Minimum	0,00%
Maximum	25,00%
Sum	1319,68%
Count	141
Largest (1)	25,00%
Smallest (1)	0,00%
Confidence Level (95,0%)	1,10%

83. Ongoing Costs - Ongoing Cost include custom enhancements, education and training, maintenance payments, services and upgrades.

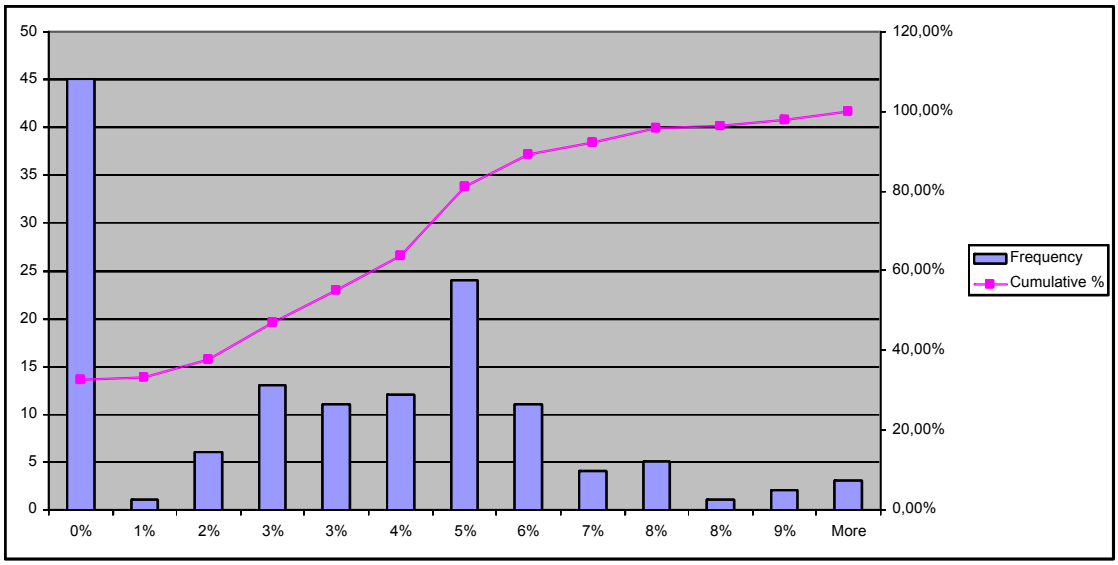
Survey group/ Average score	On going costs	N
All respondents	4,13%	138
End Users	4,22%	88
DCS vendor	4,0%	28
System integrators	2,8%	7
Engineer firm	3,72%	14
Vendor to DCS vendor	6,31%	1
Minimum	2,8%	
Maximum	6,3%	
Median	4,0%	
Standard deviation	1,30%	



Ongoing cost statistics	
Mean	4,04%
Standard Error	0,36%
Median	4,00%
Mode	0,00%
Standard Deviation	4,30%
Sample Variance	0,19%
Kurtosis	-14,12%
Skewness	83,31%
Range	15,22%
Minimum	0,00%
Maximum	15,22%
Sum	565,09%
Count	140
Largest (1)	15,22%
Smallest (1)	0,00%
Confidence Level (95,0%)	0,72%

84. Barrier to exit cost - Barrier to exit cost or switching cost, to a new technology after that the lifetime of this project and product. Importance in % of total evaluation.

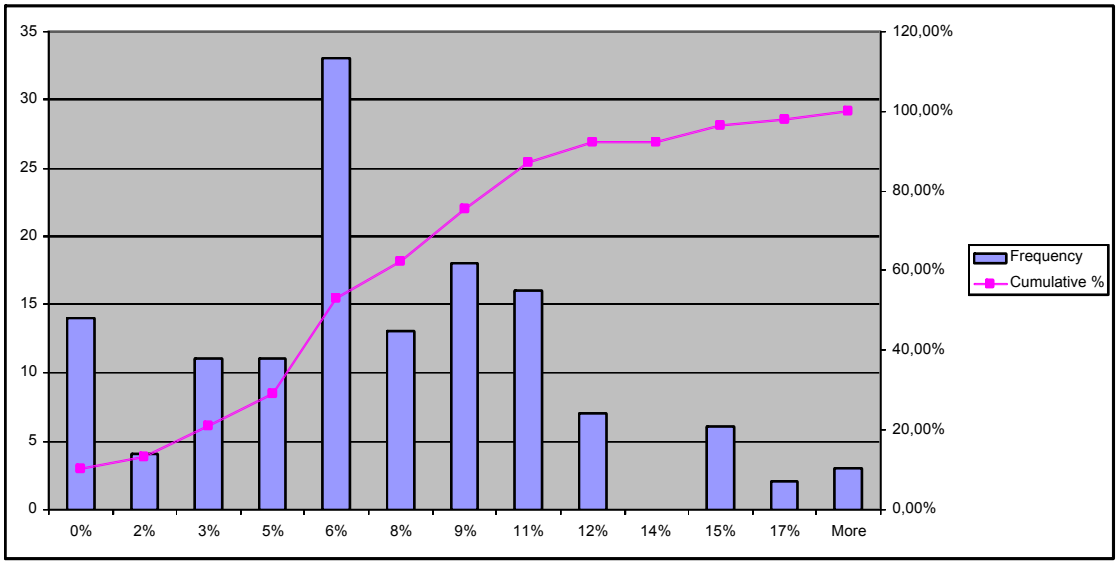
Survey group/ Average score	Barrier to exit cost	N
All respondents	2,99%	138
End Users	2,64%	88
DCS vendor	3,4%	28
System integrators	3,2%	7
Engineer firm	3,68%	14
Vendor to DCS vendor	6,31%	1
Minimum	2,6%	
Maximum	6,3%	
Median	3,4%	
Standard deviation	1,42%	



Barrier to Exit cost statistics	
Mean	2,92%
Standard Error	0,23%
Median	2,99%
Mode	0,00%
Standard Deviation	2,65%
Sample Variance	0,07%
Kurtosis	-57,94%
Skewness	47,79%
Range	10,00%
Minimum	0,00%
Maximum	10,00%
Sum	403,55%
Count	138
Largest (1)	10,00%
Smallest (1)	0,00%
Confidence Level (95,0%)	0,45%

85. User experience - Have many excellent user references. Importance in % of total evaluation.

Survey group/ Average score	User Experience	N
All respondents	6,66%	138
End Users	6,31%	88
DCS vendor	7,7%	28
System integrators	7,6%	7
Engineer firm	6,05%	14
Vendor to DCS vendor	9,01%	1
Minimum	6,0%	
Maximum	9,0%	
Median	7,6%	
Standard deviation	1,19%	



User experience statistics	
Mean	6,51%
Standard Error	0,36%
Median	5,53%
Mode	0,00%
Standard Deviation	4,20%
Sample Variance	0,18%
Kurtosis	15,30%
Skewness	54,13%
Range	18,22%
Minimum	0,00%
Maximum	18,22%
Sum	898,69%
Count	138
Largest (1)	18,22%
Smallest (1)	0,00%
Confidence Level (95,0%)	0,71%

Section - Overall supplier evaluation

Instructions Provided To Respondents

Which item in your vendor evaluation is most important at longlist shortlist or finallist.

86. Business case - Vendor guarantees that proposed solution will give the needed results for the Business case. This is most important at?

Comments/Notes for 'Longlist':
Also mentioned by shortlist and final list. (1*)

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Longlist	41,2	47	44,0	33	43,5	10	28,6	2	12,5	1	14,92
Shortlist	31,6	36	33,3	25	34,8	8	28,6	2	12,5	1	10,22
Finallist	27,2	31	22,7	17	21,7	5	42,9	3	75,0	6	24,94
Total	100	114	100	75	100	23	100	7	100	8	

87. Functionality - Seamless integration between all control functions. Integrated support. Industry-specific application templates and industry process flows. This is most important at?

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Longlist	31,7	38	32,5	26	30,4	7	50,0	4	25	2	10,82
Shortlist	40	48	38,8	31	47,8	11	25,0	2	50	4	11,36
Finallist	28,3	34	28,7	23	21,7	5	25,0	2	25	2	2,84
Total	100	120	100	80	100	23	100	8	100	8	

88. Technology - Easy to use, simple to maintain. Effective user interface. Easy to integrate. This is most important at?

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Longlist	29,5	36	25,6	21	29,2	7	50	4	57,1	4	15,46
Shortlist	44,3	54	43,9	36	50	12	37,5	2	28,6	2	9,17
Finallist	26,2	32	30,5	25	20,8	5	12,5	2	14,3	1	8,14
Total	100	122	100	82	100	24	100	8	100	7	

89. Interoperability - To other systems outside the DCS. This is most important at?

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Longlist	40,4	46	34,2	26	54,2	13	57,1	4	50	3	10,21
Shortlist	39,5	45	40,8	31	33,3	8	42,9	3	33,3	2	5,01
Finallist	20,2	23	25	19	12,5	3	--	--	16,7	1	6,36
Total	100	114	100	76	100	24	100	7	100	6	

90. Implementation process - Quick implementation focus. The user should choose a DCS vendor that uses experienced engineers, consultants, project management and a proven method to ensure quick implementation. This is most important at?

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Longlist	17,2	20	13,0	10	20,8	5	28,6	2	42,9	3	12,73
Shortlist	47,4	55	48,1	37	41,7	10	57,1	4	42,9	3	7,04
Finallist	35,3	41	39,0	30	37,5	9	14,3	1	14,3	1	13,84
Total	100	116	100	77	100	24	100	7	100	7	

91. Service and Support -Post-purchase support. Users should favor vendors that provide superior post-purchase user services such as responsive phone support, quality documentation (online and printed), online user-group discussions and web sites with diagnostic applications. Low-hassle life cycle management. Users should choose vendors with a track record of providing timely, easy-to-install upgrades with reasonable additions of new functionality and few 'bugs. This is most important at?

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Longlist	18,8	22	23,4	18	4,2	1	28,6	5	12,5	1	10,95
Shortlist	36,8	43	35	27	45,8	11	--	--	50	4	7,74
Finallist	44,4	52	41,6	32	50	12	71,4	2	37,5	3	15,11
Total	100	117	100	77	100	24	100	7	100	8	

92. Training -Vendor training given to operators, maintenance and engineers. This is most important at?

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Longlist	18,8	22	23,4	18	4,2	1	28,6	5	12,5	1	10,95
Shortlist	36,8	43	35	27	45,8	11	--	--	50	4	7,74
Finallist	44,4	52	41,6	32	50	12	71,4	2	37,5	3	15,11
Total	100	117	100	77	100	24	100	7	100	8	

93. Documentation - All standard and custom documentation (on paper and Online) of the project and its interconnections. This is most important at?

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Longlist	18,8	22	23,4	18	4,2	1	28,6	5	12,5	1	10,95
Shortlist	36,8	43	35	27	45,8	11	--	--	50	4	7,74
Finallist	44,4	52	41,6	32	50	12	71,4	2	37,5	3	15,11
Total	100	117	100	77	100	24	100	7	100	8	

94. Viability - Strategy, Strong financials, marketing and good management. Vendors rating high in viability have plenty of cash to spend on R&D and sales and marketing. Rapid growth. This is most important at?

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Longlist	48,2	55	48	36	41,7	10	71,4	5	42,9	3	13,87
Shortlist	38,6	44	42,7	32	29,2	7	28,6	2	42,9	3	8,03
Finallist	13,2	15	9,3	7	29,2	7	--	--	14,2	1	10,37
Total	100	114	100	75	100	24	100	7	100	7	

95. Vision - Future market focus. To be truly visionary, a vendor has to tie together all the characteristics the industry needs. The vendor evaluations model and integrates the criteria into an achievable, cohesive, targeted and focused business plan with a palatable message. This is most important at?

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Longlist	41,9	49	41	32	41,7	10	57,1	4	42,9	3	7,66
Shortlist	46,2	54	46,2	36	45,8	11	42,9	3	57,1	4	6,24
Finallist	12	14	12,8	10	12,5	3	--	--	--	--	0,21
Total	100	117	100	78	100	24	100	7	100	7	

96. Initial costs - Initial costs include customization and consulting, education and training, managing the implementation of the product into the business, hardware, networking, communications and software (comprising the application package, database, systems software, network management and other software needed to run the product). Users also need to gain an appreciation for the process changes that must occur up front to make the system work. This is most important at?

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Longlist	17,2	21	20,7	17	8,3	2	12,5	1	14,3	1	5,15
Shortlist	33,6	41	31,7	26	29,2	7	75	3	28,6	2	22,62
Finallist	49,2	60	47,6	39	62,5	15	12,5	1	57,1	4	22,48
Total	100	122	100	82	100	24	100	5	100	7	

97. Ongoing costs - Ongoing costs include custom enhancements, education and training, maintenance payments, services and upgrades. This is most important at?

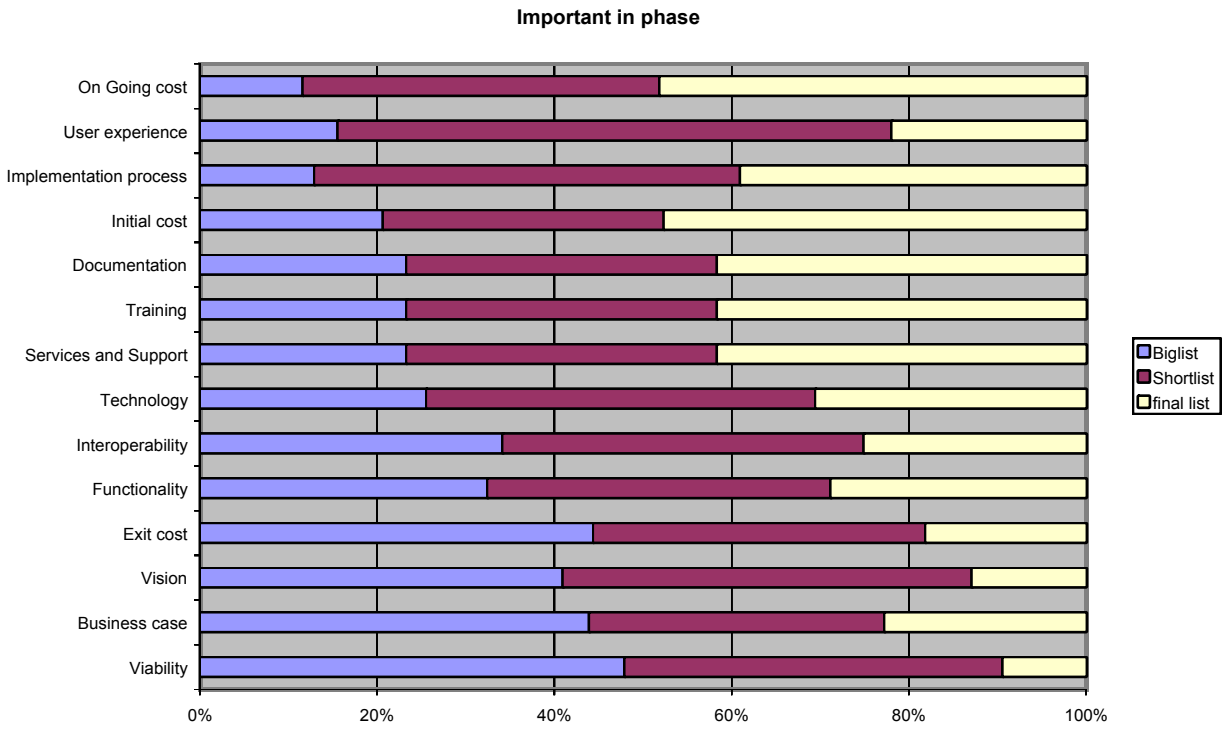
Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Longlist	12,2	14	11,7	9	8,3	16	28,6	2	16,7	1	8,88
Shortlist	39,1	45	40,3	31	25	6	71,4	5	50	3	19,43
Finallist	48,7	56	48	37	66,7	16	--	--	33,3	2	16,74
Total	100	115	100	77	100	38	100	7	100	6	

98. Barrier to Exit costs - Barrier to Exit costs or switching costs, to a new technology after the lifetime of this project and product. This is most important at?

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Longlist	42,7	47	44,4	32	37,5	9	57,1	4	33,3	2	10,41
Shortlist	38,2	42	37,5	27	50	12	14,3	1	33,3	2	14,79
Finallist	19,1	21	18,1	13	12,5	3	28,6	2	33,3	2	9,52
Total	100	110	100	72	100	24	100	7	100	6	

99. User experience - Have many excellent user references. This is most important at?

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Longlist	28,7	33	29,9	10	25	6	28,6	2	16,7	1	5,94
Shortlist	48,7	56	51,9	40	37,5	9	57,1	4	50	3	8,31
Finallist	22,6	26	18,2	14	37,5	9	14,3	1	33,3	2	11,30
Total	100	115	100	64	100	24	100	7	100	6	


Important in phase
On Going cost
User experience
Implementation process
Initial cost
Documentation
Training
Services and Support
Technology
Interoperability
Functionality
Exit cost
Vision
Business case
Viability
0%
20%
40%
60%
80%
100%
Biglist
Shortlist
final list

Section - COST - investment priorities

Instructions Provided To Respondents

Which costs evaluation -situation describes your business best in order to decide for a new DCS system? Select a priority 1 = first choice and 8 is last choice. Please select every option only ones.

100. Purchase costs - The price that the company has to pay to the vendor.

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
Prioriteit	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
1	23,4	30	21,2	18	29,2	7	20,0	2	33,3	3	6,40
2	22,7	29	27,1	23	16,7	4	10,0	1	11,1	1	7,80
3	14,8	19	16,5	14	8,3	2	10,0	1	22,2	2	6,37
4	6,3	8	4,7	4	4,2	1	20,0	2	11,1	1	7,38
5	8,6	11	9,4	8	8,3	2	10,0	1	--	--	0,85
6	7,0	9	8,2	7	4,2	1	10,0	1	--	--	2,99
7	10,2	13	8,2	7	20,8	5	10,0	1	--	--	6,82
8	7,0	9	4,7	4	8,3	2	10,0	1	22,2	2	7,60
Total	100	128	100	85	100	24	100	10	100	9	

Splitting out on basis of project type for priority 1 and 2.

Description	Total		Extension		Greenfield		Migration		Replacement	
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS
Prio 1	100,0	34	14,7%	5	44,1%	15	20,6%	7	20,6%	7
prio 2	100,0	29	11,8%	4	47,1%	16	17,6%	6	14,7%	5
Total		63	26,5%	9	91,2%	31	38,2%	13	35,3%	12

101. Initial costs - Initial costs include customization and consulting, education and training, managing the implementation of the product into the business. Hardware, networking, communications and software (comprising the application package, database, systems software, network management and other software needed to run the product). Users also need to gain an appreciation for the process changes that must occur up front to make the system work.

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
Prioriteit	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
1	20,6	27	20,2	18	29,2	7	--	--	22,2	2	4,72
2	26	33	27	24	25	6	25	2	11,1	1	7,34
3	18,3	24	18	16	12,5	3	25	2	33,3	3	9,01
4	13	17	13,5	12	4,1	1	25	2	22,2	2	9,44
5	5,3	7	6,7	6	--	--	--	--	11,1	1	3,12
6	13	17	12,4	11	16,7	4	25	2	--	--	6,40
7	2,3	3	1,12	1	8,3	2	--	--	--	--	5,08
8	1,5	2	1,12	1	4,2	1	--	--	--	--	2,18
Total	100	130	100	89	100	24	100	8	100	9	

Splitting out on basis of project type for priority 1 and 2.

Description	Total		Extension		Greenfield		Migration		Replacement	
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS
Prio 1	100,0	29	11,8%	4	32,4%	11	23,5%	8	17,6%	6
prio 2	100,0	35	32,4%	11	35,3%	12	29,4%	10	14,7%	5
Total		64	44,1%	15	67,6%	23	52,9%	18	32,4%	11

On basis of 132 responses

		Respondent				Centraal Lokaal		Projecttype				Project omvang		
Prio	Total	eindG	DCSL	SI	ENG	Cent	LOK	Green	Rept	Ext	Mig	Groot	Midden	klein
1	20%	20%	29%	0%	22%	20%	21%	24%	3%	17%	22%	18%	29%	11%
2	27%	29%	25%	25%	11%	23%	31%	29%	17%	35%	30%	25%	26%	33%
3	18%	16%	13%	25%	33%	22%	13%	26%	28%	9%	11%	20%	17%	11%
4	13%	13%	4%	25%	22%	13%	13%	13%	17%	17%	8%	10%	14%	33%
5	5%	7%	0%	0%	11%	5%	6%	3%	14%	0%	5%	8%	2%	0%
6	13%	12%	17%	25%	0%	14%	10%	5%	17%	13%	19%	18%	5%	11%
7	2%	1%	8%	0%	0%	2%	2%	0%	0%	9%	3%	1%	5%	0%
8	2%	1%	4%	0%	0%	0%	4%	0%	3%	0%	3%	1%	2%	0%

102. Ongoing costs - Ongoing costs include custom enhancements, education and training, maintenance payments, services and upgrades.

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
Prioriteit	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
1	4,6	6	5,6	5	4,2	1	--	--	--	--	1,00
2	17,7	23	18,0	16	16,7	4	12,5	1	22,2	2	4,00
3	18,5	23	14,6	13	20,8	5	25	2	33,3	3	7,86
4	21,5	28	22,5	20	16,7	4	12,5	1	33,3	3	9,03
5	17,7	23	18,0	16	12,5	3	37,5	3	11,1	1	12,18
6	8,5	12	9,0	8	16,7	4	--	--	--	--	5,45
7	9,2	12	9,0	8	12,5	3	12,5	1	--	--	2,03
8	2,3	3	3,4	3	--	--	--	--	--	--	N/A
Total	100	130	100	89	100	24	100	8	100	9	

103. Initial costs and ongoing costs for a period of 1 year - Initial costs include customization and consulting, education and training, managing the implementation of the product into the business. Hardware, networking, communications and software (comprising the application package, database, systems software, network management and other software needed to run the product). Users also need to gain an appreciation for the process changes that must occur up front to make the system work and the ongoing costs include custom enhancements, education and training, maintenance payments, services and upgrades for one year.

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
Prioriteit	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
1	10,2	13	9,3	8	12,5	3	12,5	1	11,1	1	1,52
2	19,7	25	17,4	15	29,2	7	12,5	1	22,2	2	7,10
3	18,9	24	16,3	14	20,8	5	25,0	2	33,3	3	7,25
4	20,5	26	19,8	17	25,0	6	12,5	1	22,2	2	5,36
5	13,4	17	16,3	14	12,5	3	--	--	--	--	2,67
6	7,1	9	9,3	8	--	--	12,5	1	--	--	2,26
7	6,3	8	8,1	7	--	--	12,5	1	--	--	3,08
8	3,9	5	3,5	3	--	--	12,5	1	11,1	1	4,85
Total	100	127	100	86	100	24	100	8	100	9	

104. Initial costs and ongoing costs for a period of 3 years - See above for tree years.

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
Prioriteit	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
1	6,3	8	6,8	6	8,3	2	--	--	--	--	1,07
2	14,1	18	12,5	11	16,7	4	14,3	1	22,2	2	4,23
3	20,3	26	18,2	16	25,0	6	42,9	3	11,1	1	13,62
4	22,7	29	21,6	19	33,3	8	--	--	22,2	2	6,60
5	17,2	22	19,3	17	4,2	1	--	--	44,4	4	20,34
6	10,9	14	10,2	9	12,5	3	28,6	2	--	--	10,00
7	4,7	6	5,7	5	0,0		14,3	1	--	--	7,19
8	3,9	5	5,8	5	--		--	--	--	--	--
Total	100	128	100	88	100	24	100	7	100	9	

105. Initial costs and ongoing costs for a period of 5 years - See above for five years.

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
Prioriteit	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
1	7,9	10	8,2	7	8,3	2	12,5	1	--	--	2,43
2	18,3	23	18,8	16	12,5	3	12,5	1	33,3	3	9,83
3	19,8	25	16,5	14	33,3	8	37,5	3	--	--	11,14
4	15,1	19	18,8	16	8,3	2	--	--	11,1	1	5,44
5	11,9	15	10,6	9	20,8	5	--	--	11,1	1	5,77
6	12,7	16	10,6	9	8,3	2	25,0	2	33,3	3	11,91
7	11,1	14	11,8	10	8,3	2	12,5	1	11,1	1	1,82
8	3,2	4	4,7	4	--	--	--	--	--	--	--
Total	100	126	100	85	100	24	100	8	100	9	

106. Initial costs and ongoing costs for a period more than 5 years - See above for more than five years.

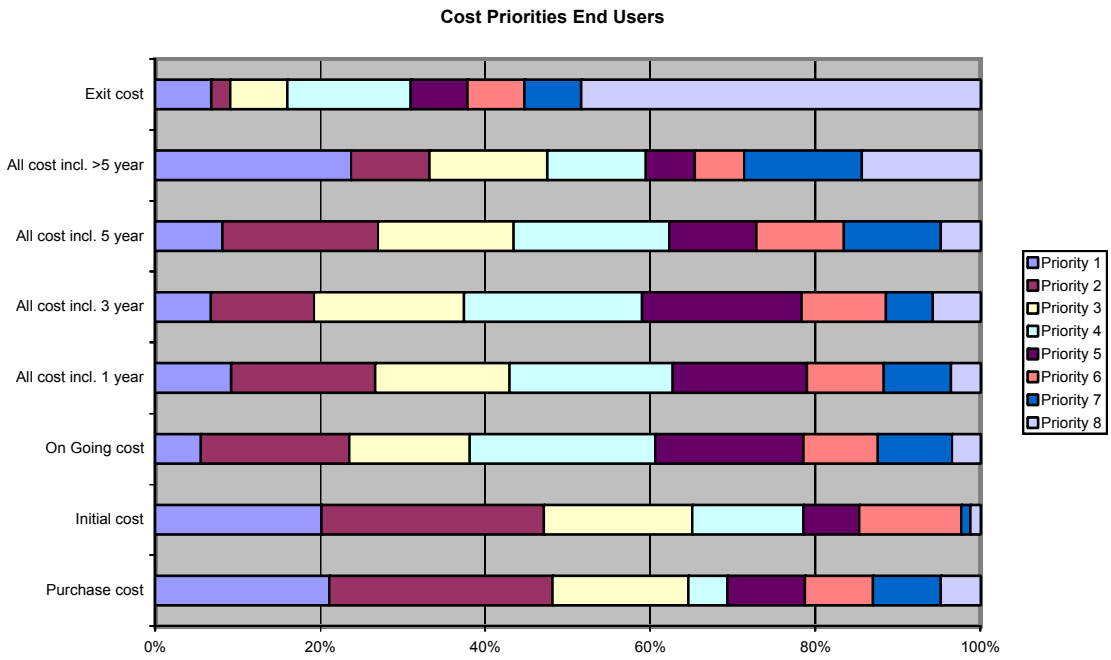
Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
Prioriteit	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
1	24,0	29	23,8	20	25,0	6	28,6	2	16,7	1	4,99
2	11,6	14	9,5	8	16,7	4	--	--	33,3	2	12,22
3	14,0	17	14,3	12	12,5	3	14,3	1	16,7	1	1,71
4	10,7	13	11,9	10	4,2	1	14,3	1	16,7	1	5,42
5	5,0	6	6,0	5	4,2	1	--	--	--	--	1,26
6	6,6	8	6,0	5	12,5	3	--	--	--	--	4,63
7	14,9	18	14,3	12	16,7	4	28,6	2	0,0		11,72
8	13,2	16	14,3	12	8,3	2	14,3	1	16,7	1	--
Total	100	121	100	84	100	24	100	7	100	6	

Splitting out on basis of project type for priority 1 and 2.

Description	Total		Extension		Greenfield		Migration		Replacement	
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS
Prio 1	100,0	29	23,5%	8	8,8%	3	26,5%	9	26,5%	9
prio 2	100,0	15	2,9%	1	8,8%	3	23,5%	8	8,8%	3
Total		44	26,5%	9	17,6%	6	50,0%	17	35,3%	12

107. Exit costs or switching costs - Exit costs or switching costs are the costs that the company has to make when it switches to a newer technology. Functionality is possible locked into proprietary file formats, proprietary applications and a propriety programming environment, all of which are to create big barriers to exit.

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
Prioriteit	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
1	7,6	10	6,9	6	4,2	1	25,0	2	8,3	1	9,43
2	4,6	6	2,3	2	8,3	2	--	--	16,7	2	7,21
3	6,9	9	6,9	6	4,2	1	12,5	1	8,3	1	3,48
4	12,2	16	14,9	13	8,3	2	--	--	8,3	1	3,82
5	9,2	12	6,9	6	16,7	4	25,0	2	--	--	9,06
6	6,1	8	6,9	6	4,2	1	12,5	1	--	--	4,25
7	7,6	10	6,9	6	4,2	1	--	--	25,0	3	11,32
8	45,8	60	48,3	42	50,0	12	25,0	2	33,3	4	12,04
Total	100	131	100	87	100	24	100	8	100	12	



Only DCS end users sort on functions 1 priority choice '1'.

Description	Total		Control engineer		System engineer		Technology Department		Automation manager		
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Purchase cost		19	20,5	8	14,3	1	37,5	3	33,3	2	
Initial cost		18	23,1	9	0	0	33,5	3	33,3	2	
All costs > 5 years		20	28,1	11	0	0	33,5	3	33,3	2	

Only DCS end users sort on functions 2 priority choice '1'.

Description	Maintenaince manager		Project manager		Purchase manager		HQ consultant				
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Purchase cost	50%	1	33,3	1	0	0	25%	1			
Initial cost	0	0	33,3	1	50	1	60%	3			
All costs > 5 years	0	0	0	0	50	1	0%	0			

Section - Customer Value Propositions

108. What is the best profile for your needs for a DCS supplier?

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
Prioriteit	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Best Product at best Time/cost	**41,1**	53	45,3	39	36,0	9	25,0	2	30,0	3	8,75
Best time/cost (Operational Efficiency)	21,7	28	24,4	21	12,0	3	25,0	2	20,0	2	6,00
High Touch and best product	15,5	20	12,8	11	28,0	7	25,0	2	--	--	8,06
Product Superiority (Best Product)	11,6	15	11,6	10	4,0	1	12,5	1	30,0	3	11,00
Best Time/cost plus High Touch	7,8	10	4,7	4	16,0	4	12,5	1	10,0	1	4,77
Best High Touch (Customer Intimacy)	2,3	3	1,2	1	4,0	1	--	--	10,0	1	4,51
Total	100	129	100	86	100	25	100	8	100	10	

DCS Vendor response split out, 'best profile for your needs for a DCS supplier?'

Priorite it	Emerson	Emerson-ABS	Honeywell	Honeywell-ABS	Metso	Metso-ABS	RTP	RTP-ABS	Siemen	Siemen-ABS	Yokogawa	Yokogawa-ABS	Som ABS
Best Product at best Time/cost	75,0%	3	14,3%	2			100,0%	1	50,0%	2	33,3%	1	9
Best time/cost (Operational Efficiency)			14,3%	2					0,0%		33,3%	1	3
High Touch and best product	25,0%	1	35,7%	5					25,0%	1			7
Product Superiority (Best Product)			7,1%	1	100,0%	1			0,0%				2
Best Time/cost plus High Touch			21,4%	3					25,0%	1	33,3%	1	5
Best High Touch (Customer Intimacy)			7,1%	1									1
Total	100%	4	100%	14	100%	1	100%	1	100%	4	100%	3	27

Section - Business case reason

109. Business case reason for Longlist selection

Rate is the number of votes divided by the total number of participants in the various groups.

total respondents		157		101		32		9		11	

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Could not maintain old system	40,1	63	41,6	42	43,8	14	66,7	6	9,1	1	23,68
Replace obsolete systems	30,6	48	28,7	29	40,6	13	55,6	5	9,1	1	19,63
Business information to the plant floor	21,0	33	22,8	23	21,9	7	22,2	2	9,1	1	6,61
Improved Automation	21,0	33	19,8	20	18,8	6	44,4	4	27,3	3	11,87
Higher production	19,7	31	19,8	20	21,9	7	--	--	36,4	4	9,02
Improve loop control	17,8	28	21,8	22	15,6	5	11,1	1	0,0		9,19
Create a more cost-effective process	15,9	25	19,8	20	6,3	2	11,1	1	18,2	2	6,31
Reduction in Equipment Maintenance	15,9	25	14,9	15	31,3	10	--	--	0,0		15,63
Automatic Start-up and shutdown routines	16,6	26	16,8	17	12,5	4	11,1	1	36,4	4	11,70
Removal of manual processes	16,6	26	15,8	16	18,8	6	22,2	2	18,2	2	2,64
Regulatory requirements	14,6	23	12,9	13	18,8	6	22,2	2	18,2	2	3,86

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Use of advanced control algorithms	14,6	23	15,8	16	15,6	5	11,1	1	9,1	1	3,36
Increasing information for the workforce	14,0	22	12,9	13	25,0	8	11,1	1	--	--	10,24
Reduce workforce	14,0	22	11,9	12	25,0	8	11,1	1	9,1	1	7,25
Efficient workflow	13,4	21	16,8	17	12,5	4	--	--	0,0		8,74
Improve reporting	11,5	18	11,9	12	18,8	6	--	--	0,0		9,49
Increase real-time decision making	13,4	21	10,9	11	25,0	8	11,1	1	9,1	1	7,37
Improve accounting data	11,5	18	8,9	9	18,8	6	22,2	2	9,1	1	6,78
Increase in process knowledge	10,2	16	9,9	10	15,6	5	11,1	1	--	--	6,58
More people thinking in the big picture	10,2	16	10,9	11	9,4	3	11,1	1	9,1	1	1,03
Need for a ease to use system	9,6	15	9,9	10	12,5	4	11,1	1	--	--	5,69
Improved product Yield	9,6	15	7,9	8	9,4	3	11,1	1	27,3	3	9,00
Improved Use of Raw Materials	9,6	15	6,9	7	18,8	6	11,1	1	9,1	1	5,14
Improvement of product Quality	9,6	15	7,9	8	9,4	3	11,1	1	27,3	3	9,00
Larger production mix	8,3	13	7,9	8	12,5	4	--	--	9,1	1	2,38
Reduce complains of customers	6,4	10	5,9	6	6,3	2	11,1	1	9,1	1	2,46
Removal of redundant processes	5,7	9	5,0	5	6,3	2	11,1	1	9,1	1	2,78

109A. Business case reason for Longlist selection Sort on projecttype

Description	Total		Green field		Migration		Replacement		Extension		Sigma
Number of projects	157		48		39		39		31		
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Could not maintain old system	42,0%	66	29,2%	14	56,4%	22	20,5%	8	9,7%	3	20,0%
Replace obsolete systems	31,2%	49	22,9%	11	43,6%	17	43,6%	17	12,9%	4	15,0%
Business information to the plant floor	24,8%	39	33,3%	16	12,8%	5	20,5%	8	9,7%	3	11,0%
Improved Automation	22,3%	35	41,7%	20	12,8%	5	15,4%	6	6,5%	2	16,0%
Higher production	21,0%	33	33,3%	16	15,4%	6	17,9%	7	12,9%	4	9,0%
Improve loop control	20,4%	32	25,0%	12	12,8%	5	17,9%	7	25,8%	8	6,0%
Create a more cost-effective process	18,5%	29	18,8%	9	17,9%	7	23,1%	9	12,9%	4	4,0%
Reduction in Equipment Maintenance	17,2%	27	16,7%	8	23,1%	9	23,1%	9	3,2%	1	9,0%
Automatic Start-up and shutdown routines	18,5%	29	29,2%	14	12,8%	5	20,5%	8	6,5%	2	10,0%
Removal of manual processes	17,2%	27	18,8%	9	20,5%	8	23,1%	9	3,2%	1	9,0%

110. Business case reason for shortlist selection

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Could not maintain old system	21,0	33	21,8	22	18,8	6	44,4	4	9,1	1	14,96
Replace obsolete systems	21,7	34	23,8	24	12,5	4	44,4	4	18,2	2	13,93
Improved Automation	20,4	32	18,8	19	15,6	5	55,6	5	27,3	3	18,17
Use of advanced control algorithms	18,5	29	19,8	20	25,0	8	--	--	9,1	1	8,11
Increase real-time decision making	17,8	28	12,9	13	31,3	10	33,3	3	18,2	2	9,96
Efficient workflow	15,9	25	13,9	14	25,0	8	22,2	2	9,1	1	7,36
Higher production	15,3	24	15,8	16	15,6	5	11,1	1	18,2	2	2,96
Improve loop control	15,9	25	19,8	20	9,4	3	11,1	1	9,1	1	5,05
Need for a ease to use system	15,3	24	15,8	16	12,5	4	33,3	3	9,1	1	10,79
Improve reporting	3,2	5	0,0		6,3	2	22,2	2	9,1	1	9,36
Reduction in Equipment Maintenance	14,6	23	12,9	13	18,8	6	22,2	2	18,2	2	3,86
Regulatory requirements	14,6	23	11,9	12	18,8	6	22,2	2	27,3	3	6,46
Improvement of product Quality	13,4	21	10,9	11	15,6	5	22,2	2	27,3	3	7,21
Business information to the plant floor	12,7	20	13,9	14	12,5	4	22,2	2	0,0		9,17
Automatic Start-up and shutdown routines	12,7	20	12,9	13	12,5	4	22,2	2	9,1	1	5,63

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Create a more cost-effective process	12,1	19	9,9	10	15,6	5	22,2	2	18,2	2	5,16
Increase in process knowledge	12,7	20	10,9	11	18,8	6	22,2	2	9,1	1	6,27
Increasing information for the workforce	11,5	18	10,9	11	12,5	4	22,2	2	9,1	1	5,87
Improve engineering data	11,5	18	11,9	12	9,4	3	11,1	1	18,2	2	3,84
Improved product Yield	10,2	16	8,9	9	12,5	4	11,1	1	18,2	2	3,96
Removal of manual processes	9,6	15	5,9	6	9,4	3	44,4	4	18,2	2	17,42
Larger production mix	8,9	14	9,9	10	9,4	3	11,1	1	0,0		5,12
Removal of redundant processes	7,0	11	5,9	6	12,5	4	11,1	1	0,0		5,68
Improve accounting data	8,3	13	8,9	9	3,1	1	11,1	1	18,2	2	6,22
Improved Use of Raw Materials	6,4	10	4,0	4	9,4	3	11,1	1	18,2	2	5,87
More people thinking in the big picture	6,4	10	5,9	6	12,5	4	--	--	0,0		6,25
Reduce complains of customers	5,7	9	2,0	2	9,4	3	22,2	2	18,2	2	9,06

110A. Business case reason for shortlist selection sort on project type

Description	Total		Green field		Migration		Replacement		Extension		Sigma
Number of projects	157		48		39		39		31		
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Improved Automation	22,9%	36	33,3%	16	20,5%	8	25,6%	10	6,5%	2	11,3%
Could not maintain old system	21,7%	34	10,4%	5	30,8%	12	35,9%	14	9,7%	3	13,6%
Replace obsolete systems	21,7%	34	18,8%	9	25,6%	10	28,2%	11	12,9%	4	6,9%
Use of advanced control algorithms	21,0%	33	25,0%	12	23,1%	9	20,5%	8	12,9%	4	5,3%
Increase real-time decision making	18,5%	29	27,1%	13	23,1%	9	12,8%	5	6,5%	2	9,4%
Improve loop control	17,8%	28	20,8%	10	20,5%	8	20,5%	8	6,5%	2	7,1%
Need for a ease to use system	17,2%	27	20,8%	10	23,1%	9	12,8%	5	9,7%	3	6,4%
Efficient workflow	16,6%	26	22,9%	11	25,6%	10	12,8%	5	0,0%	0	11,6%
Higher production	16,6%	26	14,6%	7	20,5%	8	20,5%	8	9,7%	3	5,2%
Improve reporting	16,6%	26	20,8%	10	17,9%	7	10,3%	4	16,1%	5	4,5%
Regulatory requirements	15,3%	24	20,8%	10	17,9%	7	12,8%	5	6,5%	2	6,3%
Improvement of product Quality	15,3%	24	22,9%	11	7,7%	3	17,9%	7	9,7%	3	7,1%
Reduction in Equipment Maintenance	14,6%	23	14,6%	7	20,5%	8	15,4%	6	6,5%	2	5,8%
Automatic Start-up and shutdown routines	14,6%	23	22,9%	11	12,8%	5	12,8%	5	6,5%	2	6,8%
Business information to the plant floor	14,0%	22	14,6%	7	15,4%	6	15,4%	6	9,7%	3	2,7%
Create a more cost-effective process	14,0%	22	20,8%	10	12,8%	5	15,4%	6	3,2%	1	7,4%

111. Business case reason for final selection

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Could not maintain old system	21,0	33	21,8	22	18,8	6	44,4	4	9,1	1	14,96
Replace obsolete systems	21,7	34	23,8	24	12,5	4	44,4	4	18,2	2	13,93
Improved Automation	20,4	32	18,8	19	15,6	5	55,6	5	27,3	3	18,17
Use of advanced control algorithms	18,5	29	19,8	20	25,0	8	--	--	9,1	1	8,11
Increase real-time decision making	17,8	28	12,9	13	31,3	10	33,3	3	18,2	2	9,96
Efficient workflow	15,9	25	13,9	14	25,0	8	22,2	2	9,1	1	7,36
Higher production	15,3	24	15,8	16	15,6	5	11,1	1	18,2	2	2,96
Improve loop control	15,9	25	19,8	20	9,4	3	11,1	1	9,1	1	5,05
Need for a ease to use system	15,3	24	15,8	16	12,5	4	33,3	3	9,1	1	10,79
Improve reporting	3,2	5	0,0		6,3	2	22,2	2	9,1	1	9,36
Reduction in Equipment Maintenance	14,6	23	12,9	13	18,8	6	22,2	2	18,2	2	3,86
Regulatory requirements	14,6	23	11,9	12	18,8	6	22,2	2	27,3	3	6,46
Improvement of product Quality	13,4	21	10,9	11	15,6	5	22,2	2	27,3	3	7,21
Business information to the plant floor	12,7	20	13,9	14	12,5	4	22,2	2	0,0		9,17
Automatic Start-up and shutdown routines	12,7	20	12,9	13	12,5	4	22,2	2	9,1	1	5,63
Create a more cost-effective process	12,1	19	9,9	10	15,6	5	22,2	2	18,2	2	5,16
Increase in process knowledge	12,7	20	10,9	11	18,8	6	22,2	2	9,1	1	6,27
Increasing information for the workforce	11,5	18	10,9	11	12,5	4	22,2	2	9,1	1	5,87

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Improve engineering data	11,5	18	11,9	12	9,4	3	11,1	1	18,2	2	3,84
Improved product Yield	10,2	16	8,9	9	12,5	4	11,1	1	18,2	2	3,96
Removal of manual processes	9,6	15	5,9	6	9,4	3	44,4	4	18,2	2	17,42
Larger production mix	8,9	14	9,9	10	9,4	3	11,1	1	0,0		5,12
Removal of redundant processes	7,0	11	5,9	6	12,5	4	11,1	1	0,0		5,68
Improve accounting data	8,3	13	8,9	9	3,1	1	11,1	1	18,2	2	6,22
Improved Use of Raw Materials	6,4	10	4,0	4	9,4	3	11,1	1	18,2	2	5,87
More people thinking in the big picture	6,4	10	5,9	6	12,5	4	--	--	0,0		6,25
Reduce complains of customers	5,7	9	2,0	2	9,4	3	22,2	2	18,2	2	9,06

111A. Business case reason for final selection sort on project type

Description	Total		Green field		Migration		Replacement		Extension		Sigma
Number of projects	157		48		39		39		31		
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Could not maintain old system	25,5%	40	12,5%	6	33,3%	13	41,0%	16	16,1%	5	13,7%
Improved Automation	24,2%	38	29,2%	14	20,5%	8	25,6%	10	19,4%	6	4,6%
Automatic Start-up and shutdown routines	20,4%	32	27,1%	13	17,9%	7	17,9%	7	16,1%	5	4,9%
Replace obsolete systems	17,2%	27	10,4%	5	20,5%	8	30,8%	12	6,5%	2	10,9%
Use of advanced control algorithms	16,6%	26	12,5%	6	20,5%	8	15,4%	6	19,4%	6	3,7%
Improve loop control	16,6%	26	12,5%	6	23,1%	9	17,9%	7	12,9%	4	5,0%
Improvement of product Quality	16,6%	26	16,7%	8	20,5%	8	12,8%	5	16,1%	5	3,2%
Create a more cost-effective process	16,6%	26	12,5%	6	15,4%	6	17,9%	7	22,6%	7	4,3%
Higher production	15,9%	25	10,4%	5	25,6%	10	12,8%	5	16,1%	5	6,7%
Increase real-time decision making	15,3%	24	20,8%	10	17,9%	7	12,8%	5	6,5%	2	6,3%
Improve reporting	15,3%	24	16,7%	8	17,9%	7	12,8%	5	12,9%	4	2,6%
Increasing information for the workforce	15,3%	24	14,6%	7	12,8%	5	20,5%	8	12,9%	4	3,6%
Improved product Yield	15,3%	24	14,6%	7	23,1%	9	10,3%	4	12,9%	4	5,5%
Efficient workflow	13,4%	21	12,5%	6	15,4%	6	12,8%	5	12,9%	4	1,3%
Reduction in Equipment Maintenance	13,4%	21	16,7%	8	10,3%	4	20,5%	8	3,2%	1	7,6%
Increase in process knowledge	12,7%	20	16,7%	8	10,3%	4	12,8%	5	9,7%	3	3,2%

Business case reason for final selection sort on project type part 2

Description	Total		Green field		Migration		Replacement		Extension		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Need for a ease to use system	11,5%	18	14,6%	7	12,8%	5	7,7%	3	9,7%	3	3,1%
Business information to the plant floor	11,5%	18	10,4%	5	15,4%	6	12,8%	5	6,5%	2	3,8%
Removal of manual processes	10,8%	17	14,6%	7	7,7%	3	12,8%	5	6,5%	2	3,9%
Regulatory requirements	10,2%	16	12,5%	6	10,3%	4	10,3%	4	6,5%	2	2,5%
Improve engineering data	8,9%	14	10,4%	5	5,1%	2	10,3%	4	9,7%	3	2,5%
Removal of redundant processes	8,3%	13	8,3%	4	2,6%	1	17,9%	7	3,2%	1	7,1%
Reduce complains of customers	7,6%	12	4,2%	2	10,3%	4	10,3%	4	6,5%	2	3,0%
Improved Use of Raw Materials	7,0%	11	8,3%	4	7,7%	3	2,6%	1	9,7%	3	3,1%
Larger production mix	6,4%	10	2,1%	1	17,9%	7	5,1%	2	0,0%	0	8,1%
Improve accounting data	6,4%	10	4,2%	2	7,7%	3	7,7%	3	6,5%	2	1,7%
More people thinking in the big picture	6,4%	10	2,1%	1	10,3%	4	10,3%	4	3,2%	1	4,4%

Section - Importance for Business case

1 Not important at all - No interest and no need
2 Not very important - Nice to have if easy to implement
3 Somewhat important - Nice to have
4 Important - Should have
5 Very important - Must have
6 Extreme important - Must have (knock-out criteria)
7 No opinion
8 Don't know

112. Importance of business information to the plant floor

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Extreme important	5,2	6	5,0	4	4,5	1	12,5	1	--	--	4,47
Very important	18,1	21	15,0	12	27,3	6	25,0	2	16,7	1	6,06
Important	20,7	24	21,3	17	22,7	5	12,5	1	16,7	1	4,64
Somewhat important	24,1	28	27,5	22	22,7	5	--	--	16,7	1	5,43
Not very important	19,8	23	18,8	15	18,2	4	37,5	3	16,7	1	9,86
Not important at all	8,6	10	10,0	8	4,5	1	--	--	16,7	1	6,07
Abstain, No interest	--	0	--	--	--	--	--	--	--	--	--
No opinion	2,6	3	2,5	2	--	--	--	--	16,7	1	10,02
Don't know	0,9	1	--	--	--	--	12,5	1	--	--	--
Total	100	116	100	80	100	22	100	8	100	6	

113. Importance of Could not maintain old system

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Extreme important	38,9	44	40,3	31	31,8	7	37,5	3	50,0	3	7,60
Very important	29,2	33	36,4	28	18,2	4	12,5	1	--	--	12,47
Important	9,7	11	6,5	5	13,6	3	25,0	2	16,7	1	7,66
Somewhat important	3,5	4	2,6	2	9,1	2	--	--	--	--	4,59
Not very important	7,1	8	5,2	4	9,1	2	12,5	1	16,7	1	4,89
Not important at all	4,4	5	5,2	4	4,5	1	--	--	--	--	0,46
Abstain, No interest	2,7	3	1,3	1	4,5	1	12,5	1	--	--	--
No opinion	4,4	5	2,6	2	9,1	2	--	--	16,7	1	7,04
Don't know	--	--	--	--	--	--	--	--	--	--	--
Total	100	113	100	77	100	22	100	8	100	6	

114. Importance of create a more cost-effective process

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Extreme important	13,5	15	13,0	10	13,6	3	14,3	1	20,0	1	3,23
Very important	25,2	28	24,7	19	27,3	6	14,3	1	40,0	2	10,57
Important	31,5	35	35,1	27	27,3	6	14,3	1	20,0	1	9,01
Somewhat important	17,1	19	18,2	14	13,6	3	28,6	2	--	--	7,66
Not very important	9,0	10	7,8	6	9,1	2	14,3	1	20,0	1	5,56
Not important at all	0,9	1	--	--	4,5	1	--	--	--	--	--
Abstain, No interest	0,9	1	--	--	4,5	1	--	--	--	--	--
No opinion	0,9	1	1,3	1	--	--	--	--	--	--	--
Don't know	0,9	1	--	--	--	--	14,3	1	--	--	--
Total	100	111	100	77	100	22	100	7	100	5	

115. Importance of Efficient workflow

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Extreme important	0,9	1	--	--	4,5	1	--		--	--	--
Very important	20,0	23	17,9	14	13,6	3	40,0	4	40,0	2	14,09
Important	44,3	51	46,2	36	45,5	10	30,0	3	40,0	2	7,46
Somewhat important	21,7	25	25,6	20	18,2	4	--	--	20,0	1	3,89
Not very important	7,0	8	9,0	7	0,0		10,0	1	--	--	5,50
Not important at all	1,7	2	--	--	9,1	2	--	--	--	--	--
Abstain, No interest	2,6	3	1,3	1	9,1	2	--	--	--	--	5,52
No opinion	0,9	1	--	--	--	--	10,0	1	--	--	--
Don’t know	0,9	1	--	--	--	--	10,0	1	--	--	--
Total	100	115	100	78	100	22	100	10	100	5	

116. Importance of Higher production

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Extreme important	8,1	9	10,1	8	5,3	1	--	--	--	--	3,44
Very important	23,4	26	24,1	19	15,8	3	25,0	2	40,0	2	10,08
Important	35,1	39	34,2	27	36,8	7	37,5	3	40,0	2	2,39
Somewhat important	22,5	25	24,1	19	21,1	4	12,5	1	20,0	1	4,91
Not very important	7,2	8	6,3	5	10,5	2	12,5	1	--	--	3,15
Not important at all	--	0	--	--	--	--	--	--	--	--	--
Abstain, No interest	1,8	2	--	--	10,5	2	--	--	--	--	--
No opinion	0,9	1	1,3	1	--	--	--	--	--	--	--
Don't know	0,9	1	--	--	--	--	12,5	1	0,0		8,84
Total	100	111	100	79	100	19	100	8	100	5	

117. Importance of improving loop control

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Extreme important	7,9	9	7,7	6	8,3	2	12,5	1	--	--	2,61
Very important	28,1	32	30,8	24	16,7	4	37,5	3	25,0	1	8,84
Important	35,1	40	38,5	30	29,2	7	12,5	1	50,0	2	15,84
Somewhat important	20,2	23	19,2	15	25,0	6	12,5	1	25,0	1	5,95
Not very important	6,1	7	3,8	3	8,3	2	25,0	2	--	--	11,15
Not important at all	0,9	1	--	--	4,2	1	--	--	--	--	--
Abstain, No interest	1,8	2	--	--	8,3	2	--	--	--	--	--
No opinion	--	--	--	--	--	--	--	--	--	--	--
Don't know	--	--	--	--	--	--	--	--	--	--	--
Total	100	114	100	78	100	24	100	8	100	4	

118. Importance of improving reporting

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Extreme important	3,6	4	2,7	2	4,5	1	12,5	1	--	--	5,22
Very important	27,0	30	26,7	20	22,7	5	37,5	3	33,3	2	6,62
Important	36,9	41	40,0	30	36,4	8	12,5	1	33,3	2	12,34
Somewhat important	19,8	22	20,0	15	18,2	4	12,5	1	33,3	2	8,82
Not very important	11,7	13	10,7	8	13,6	3	25,0	2	--	--	7,57
Not important at all	0,9	1	--	--	4,5	1	--	--	--	--	--
Abstain, No interest	--	--	--	--	--	--	--	--	--	--	--
No opinion	--	--	--	--	--	--	--	--	--	--	--
Don't know	--	--	--	--	--	--	--	--	--	--	--
Total	100	111	100	75	100	22	100	8	100	6	

119. Importance of improving real-time decision making

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Extreme important	9,9	11	11,8	9	4,5	1	12,5	1	--	--	4,41
Very important	22,5	25	18,4	14	40,9	9	12,5	1	20,0	1	12,40
Important	30,6	34	34,2	26	18,2	4	37,5	3	20,0	1	9,80
Somewhat important	21,6	24	22,4	17	13,6	3	12,5	1	60,0	3	22,35
Not very important	10,8	12	9,2	7	18,2	4	12,5	1	--	--	4,54
Not important at all	2,7	3	3,9	3	--	--	--	--	--	--	--
Abstain, No interest	0,9	1	--	--	4,5	1	--	--	--	--	--
No opinion	--	--	--	--	--	--	--	--	--	--	--
Don't know	0,9	1	0,0		0,0		12,5	1	--	--	7,22
Total	100	111	100	76	100	22	100	8	100	5	

120. Importance of increasing information for the workforce

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Extreme important	5,7	6	6,5	5	5,6	1	--	--	--	--	0,66
Very important	22,6	24	16,9	13	33,3	6	50,0	4	25,0	1	14,16
Important	29,2	31	29,9	23	27,8	5	25,0	2	25,0	1	2,37
Somewhat important	23,6	25	29,9	23	--	--	--	--	50,0	2	14,23
Not very important	13,2	14	9,1	7	27,8	5	25,0	2	--	--	10,08
Not important at all	1,9	2	2,6	2	--	--	--	--	--	--	--
Abstain, No interest	2,8	3	2,6	2	5,6	1	--	--	--	--	2,09
No opinion	--	--	1,3	1	--	--	--	--	--	--	--
Don't know	0,9	1	1,3	1	--	--	--	--	--	--	--
Total	100	106	100	77	100	18	100	8	100	4	

121. Importance of larger production mix

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Extreme important	7,5	8	4,2	3	19,0	4	12,5	1	--	--	7,46
Very important	7,5	8	5,6	4	9,5	2	12,5	1	20,0	1	6,11
Important	21,5	23	18,1	13	33,3	7	37,5	3	--	--	10,24
Somewhat important	23,4	25	26,4	19	19,0	4	12,5	1	20,0	1	5,68
Not very important	17,8	19	19,4	14	9,5	2	12,5	1	--	--	5,09
Not important at all	7,5	8	11,1	8	0,0	0	--	--	40,0	2	20,65
Abstain, No interest	5,6	6	5,6	4	4,8	1	12,5	1	--	--	4,26
No opinion	1,9	2	1,4	1	--	--	--	--	20,0	1	13,16
Don't know	7,5	8	8,3	6	4,8	1	--	--	--	--	2,53
Total	100	107	100	72	100	21	100	8	100	5	

122. Importance of more people thinking the big picture

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Extreme important	3,3	2	--	--	16,7	2	--	--	--	--	--
Very important	10,0	6	--	--	8,3	1	25,0	1	--	--	11,79
Important	15,0	9	17,1	6	16,7	2	--	--	--	--	0,34
Somewhat important	23,3	14	22,9	8	25,0	3	--	--	75	3	29,51
Not very important	25,0	15	34,3	12	--	--	50,0	2	25	1	12,64
Not important at all	8,3	5	14,3	5	--	--	--	--	--	--	--
Abstain, No interest	3,3	2	2,9	1	8,3	1	--	--	--	--	3,87
No opinion	3,3	2	2,9	1	8,3	1	--	--	--	--	3,87
Don’t know	8,3	5	5,7	2	16,7	2	25,0	1	--	--	9,67
Total	100	60	100	35	100	12	100	4	100	4	

123. Importance of the need for a easy to use system

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Extreme important	8,8	10	7,8	6	9,1	2	25,0	2	--	--	9,58
Very important	23,9	27	24,7	19	18,2	4	12,5	1	40	2	11,87
Important	32,7	37	28,6	22	40,9	9	37,5	3	60	3	13,24
Somewhat important	23,9	27	27,3	21	22,7	5	12,5	1	--	--	7,57
Not very important	7,1	8	7,8	6	--	--	12,5	1	--	--	3,33
Not important at all	0,9	1	1,3	1	4,5	1	--	--	--	--	2,30
Abstain, No interest	0,9	1	--	--	4,5	1	--	--	--	--	--
No opinion	0,9	1	1,3	1	--	--	--	--	--	--	--
Don't know	0,9	1	1,3	1	--	--	--	--	--	--	
Total	100	113	100	77	100	22	100	8	100	5	

124. Importance of reducing complaints of customers

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Extreme important	10,1	11	6,7	5	18,2	4	14,3	1	--	--	5,86
Very important	23,9	26	24,0	18	22,7	5	28,6	2	25,0	1	2,51
Important	17,4	19	18,7	14	13,6	3	14,3	1	25,0	1	5,24
Somewhat important	18,3	20	18,7	14	18,2	4	14,3	1	25,0	1	4,43
Not very important	13,8	15	12,0	9	13,6	3	28,6	2	25,0	1	8,22
Not important at all	9,2	10	12,0	9	4,5	1	--	--	--	--	5,27
Abstain, No interest	2,8	3	2,7	2	4,5	1	--	--	--	--	--
No opinion	4,6	5	5,3	4	4,5	1	--	--	--	--	--
Don't know	0,0		0,0		0,0		0,0		0,0		
Total	100	109	100	75	100	22	100	7	100	4	

125. Importance of reducing workforce

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Extreme important	9,6	11	12,8	10	4,5	1	--	--	--	--	5,85
Very important	20,0	23	14,1	11	36,4	8	37,5	3	--	--	13,19
Important	24,3	28	23,1	18	18,2	4	12,5	1	83,3	5	32,99
Somewhat important	15,7	18	15,4	12	18,2	4	12,5	1	16,7	1	2,41
Not very important	18,3	21	20,5	16	13,6	3	25,0	2	--	--	5,72
Not important at all	6,1	7	9,0	7	--	--	--	--	--	--	--
Abstain, No interest	2,6	3	2,6	2	4,5	1	--	--	--	--	--
No opinion	2,6	3	2,6	2	4,5	1	--	--	--	--	--
Don’t know	0,9	1	0,0		--	--	12,5	1	--	--	
Total	100	115	100	78	100	22	100	8	100	6	

126. Importance of regulatory requirements

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Extreme important	17,0	19	--	--	9,5	2	37,5	3	20,0	1	14,13
Very important	20,5	23	23,4	15	23,8	5	12,5	1	40,0	2	11,33
Important	24,1	27	26,6	17	33,3	7	12,5	1	40,0	2	11,76
Somewhat important	16,1	18	21,9	14	9,5	2	25,0	2	--	--	8,18
Not very important	9,8	11	12,5	8	9,5	2	12,5	1	--	--	1,72
Not important at all	6,3	7	7,8	5	9,5	2	--	--	--	--	1,21
Abstain, No interest	1,8	2	1,6	1	4,8	1	--	--	--	--	2,26
No opinion	1,8	2	3,1	2	--	--	--	--	--	--	--
Don’t know	2,7	3	3,1	2	--	--	--	--	--	--	--
Total	100	112	100	64	100	21	100	8	100	5	

127. Importance of removal of manual processes

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Extreme important	9,0	10	12,0	9	--	--	12,5	1	--	--	0,35
Very important	17,1	19	17,3	13	13,6	3	25,0	2	20,0	1	4,78
Important	38,7	43	37,3	28	45,5	10	25,0	2	60,0	3	14,68
Somewhat important	18,9	21	21,3	16	18,2	4	12,5	1	--	--	4,48
Not very important	9,9	11	9,3	7	13,6	3	12,5	1	--	--	2,23
Not important at all	1,8	2	1,3	1	4,5	1	--	--	--	--	2,27
Abstain, No interest	--	--	--	--	--	--	--	--	--	--	--
No opinion	0,9	1	--	--	4,5	1	--	--	--	--	--
Don't know	3,6	4	1,3	1	--	--	12,5	1	20,0	1	--
Total	100	111	100	75	100	22	100	8	100	5	

128. Importance of removal of redundant processes

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Extreme important	3,6	4	5,3	4	--	--	--	--	--	--	--
Very important	12,7	14	13,3	10	4,8	1	12,5	1	40,0	2	15,39
Important	29,1	32	25,3	19	38,1	8	25,0	2	40,0	2	8,05
Somewhat important	24,5	27	29,3	22	23,8	5	--	--	--	--	3,91
Not very important	15,5	17	16,0	12	19,0	4	12,5	1	--	--	3,28
Not important at all	6,4	7	6,7	5	4,8	1	12,5	1	--	--	4,03
Abstain, No interest	2,7	3	--	--	4,8	1	25,0	2	--	--	--
No opinion	1,8	2	1,3	1	4,8	1	--	--	--	--	--
Don’t know	3,6	4	2,7	2	--	--	12,5	1	20,0	1	--
Total	100	110	100	75	100	21	100	8	100	5	

129. Importance of replacing obsolete systems

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Extreme important	25,0	28	21,1	16	22,7	5	62,5	5	20,0	1	20,65
Very important	33,0	37	38,2	29	18,2	4	25,0	2	40,0	2	10,50
Important	18,8	21	17,1	13	27,3	6	--	--	40,0	2	11,47
Somewhat important	10,7	12	11,8	9	13,6	3	--	--	--	--	1,27
Not very important	3,6	4	5,3	4	--	--	--	--	--	--	--
Not important at all	4,5	5	2,6	2	13,6	3	--	--	--	--	7,78
Abstain, No interest	2,7	3	1,3	1	4,5	1	12,5	1	--	--	5,76
No opinion	0,9	1	1,3	1	--	--	--	--	--	--	--
Don’t know	0,9	1	1,3	1	--	--	--	--	--	--	--
Total	100	112	100	76	100	22	100	8	100	5	

130. Importance of the use of advanced control algorithms

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Extreme important	10,0	11	13,3	10	--	--	--	--	--	--	--
Very important	33,6	37	33,3	25	31,8	7	50,0	4	25,0	1	10,61
Important	26,4	29	26,7	20	27,3	6	12,5	1	50,0	2	15,51
Somewhat important	18,2	20	16,0	12	27,3	6	12,5	1	25,0	1	7,07
Not very important	9,1	10	9,3	7	9,1	2	12,5	1	--	--	1,90
Not important at all	1,8	2	1,3	1	--	--	12,5	1	--	--	7,90
Abstain, No interest	--	--	--	--	--	--	--	--	--	--	--
No opinion	--	--	--	--	--	--	--	--	--	--	--
Don't know	0,9	1	--	--	4,5	1	--	--	--	--	--
Total	100	110	100	75	100	22	100	8	100	4	

131. Importance of improved product yield

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Extreme important	12,4	14	13,3	10	13,0	3	--	--	16,7	1	2,01
Very important	23,9	27	25,3	19	13,0	3	37,5	3	33,3	2	10,76
Important	26,5	30	26,7	20	30,4	7	12,5	1	33,3	2	9,24
Somewhat important	20,4	23	21,3	16	26,1	6	12,5	1	--	--	6,89
Not very important	8,0	9	5,3	4	13,0	3	12,5	1	16,7	1	4,74
Not important at all	3,5	4	4,0	3	--	--	12,5	1	--	--	6,01
Abstain, No interest	1,8	2	2,7	2	--	--	--	--	--	--	--
No opinion	2,7	3	1,3	1	--	--	12,5	1	--	--	7,90
Don't know	0,9	1	--	--	4,3	1	--	--	--	--	--
Total	100	113	100	75	100	23	100	8	100	6	

132. Importance of improvement of product quality

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Extreme important	12,5	14	12,0	9	13,6	3	12,5	1	16,7	1	2,09
Very important	26,8	30	29,3	22	18,2	4	37,5	3	16,7	1	9,84
Important	33,0	37	32,0	24	40,9	9	12,5	1	50,0	3	16,02
Somewhat important	18,8	21	18,7	14	22,7	5	12,5	1	--	--	5,15
Not very important	6,3	7	5,3	4	4,5	1	12,5	1	16,7	1	5,83
Not important at all	1,8	2	2,7	2	--	--	--	--	--	--	--
Abstain, No interest	--	--	--	--	--	--	--	--	--	--	--
No opinion	--	--	--	--	--	--	--	--	--	--	--
Don’t know	0,9	1	--	--	--	--	12,5	1	--	--	--
Total	100	112	100	75	100	22	100	8	100	6	

133. Importance of improved use of raw materials

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Extreme important	8,2	9	8,1	6	9,1	2	12,5	1	--	--	2,30
Very important	20,9	23	18,9	14	22,7	5	25,0	2	20,0	1	2,74
Important	30,9	34	29,7	22	36,4	8	12,5	1	60,0	3	19,67
Somewhat important	22,7	25	25,7	19	27,3	6	--	--	--	--	1,13
Not very important	7,3	8	6,8	5	4,5	1	25,0	2	--	--	11,23
Not important at all	6,4	7	8,1	6	--	--	12,5	1	--	--	--
Abstain, No interest	--	--	--	--	--	--	--	--	--	--	--
No opinion	1,8	2	2,7	2	--	--	--	--	--	--	--
Don't know	1,8	2	--	--	--	--	12,5	1	20,0	1	--
Total	100	110	100	74	100	22	100	8	100	5	

134. Importance of reduction in equipment maintenance

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Extreme important	9,1	10	6,8	5	9,1	2	12,5	1	20,0	1	5,78
Very important	28,2	31	29,7	22	27,3	6	25,0	2	20,0	1	4,14
Important	32,7	36	33,8	25	27,3	6	37,5	3	40,0	2	5,54
Somewhat important	15,5	17	17,6	13	18,2	4	--	--	--	--	0,43
Not very important	8,2	9	6,8	5	13,6	3	12,5	1	--	--	3,69
Not important at all	1,8	2	1,4	1	4,5	1	--	--	--	--	--
Abstain, No interest	1,8	2	2,7	2	--	--	--	--	--	--	--
No opinion	0,9	1	1,4	1	--	--	--	--	--	--	--
Don't know	1,8	2	--	--	--	--	12,5	1	20,0	1	--
Total	100	110	100	74	100	22	100	8	100	5	

135. Importance of improved automation

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Extreme important	11,1	12	13,7	10	--	--	12,5	1	--	--	0,85
Very important	28,7	31	30,1	22	13,6	3	62,5	5	25	1	20,95
Important	34,3	37	35,6	26	36,4	8	12,5	1	50	2	15,55
Somewhat important	14,8	16	15,1	11	22,7	5	--	--	--	--	5,42
Not very important	5,6	6	2,7	2	13,6	3	12,5	1	--	--	5,99
Not important at all	1,9	2	1,4	1	4,5	1	--	--	--	--	--
Abstain, No interest	0,9	1	0,0		4,5	1	--	--	--	--	--
No opinion	0,9	1	1,4	1	--	--	--	--	--	--	--
Don’t know	1,9	2	0,0		4,5	1	--	--	25	1	--
Total	100	108	100	73	100	22	100	8	100	4	

136. Importance of improved accounting data

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Extreme important	0,9	1	--	--	--	--	12,5	1	--	--	--
Very important	17,4	19	16,4	12	13,6	3	25,0	2	20,0	1	4,90
Important	22,0	24	24,7	18	18,2	4	25,0	2	--	--	3,84
Somewhat important	26,6	29	30,1	22	27,3	6	--	--	20,0	1	5,23
Not very important	18,3	20	15,1	11	27,3	6	25,0	2	20,0	1	5,44
Not important at all	6,4	7	8,2	6	4,5	1	--	--	--	--	2,60
Abstain, No interest	0,9	1	1,4	1	--	--	--	--	--	--	--
No opinion	1,8	2	2,7	2	--	--	--	--	--	--	--
Don't know	5,5	6	1,4	1	9,1	2	12,5	1	40,0	2	16,83
Total	100	109	100	73	100	22	100	8	100	5	

137. Importance of improved engineering data

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Extreme important	1,8	2	2,7	2	--	--	--	--	--	--	--
Very important	20,2	22	17,6	13	13,6	3	50,0	4	25,0	1	16,33
Important	33,0	36	35,1	26	36,4	8	12,5	1	25,0	1	11,07
Somewhat important	27,5	30	28,4	21	36,4	8	--	--	25,0	1	5,84
Not very important	11,9	13	10,8	8	9,1	2	37,5	3	--	--	15,93
Not important at all	2,8	3	4,1	3	--	--	--	--	--	--	--
Abstain, No interest	1,8	2	1,4	1	4,5	1	--	--	--	--	--
No opinion	--	--	--	--	--	--	--	--	--	--	--
Don't know	0,9	1	--	--	--	--	--	--	25,0	1	--
Total	100	109	100	74	100	22	100	8	100	4	

138. Importance of increase in process knowledge

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Extreme important	6,4	7	5,4	4	9,1	2	--	--	--	--	--
Very important	20,2	22	21,6	16	22,7	5	12,5	1	--	--	5,61
Important	33,0	36	31,1	23	31,8	7	37,5	3	75,0	3	20,96
Somewhat important	22,0	24	28,4	21	13,6	3	--	--	--	--	10,42
Not very important	11,9	13	10,8	8	9,1	2	37,5	3	--	--	15,93
Not important at all	1,8	2	2,7	2	--	--	--	--	--	--	--
Abstain, No interest	2,8	3	--	--	13,6	3	--	--	--	--	--
No opinion	--	--	--	--	--	--	--	--	--	--	--
Don't know	1,8	2	--	--	--	--	12,5	1	25,0	1	--
Total	100	109	100	74	100	22	100	8	100	4	

139. Importance of automatic start-up and shutdown routines

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Extreme important	10,1	11	10,8	8	9,1	2	12,5	1	--	--	--
Very important	30,3	33	29,7	22	27,3	6	62,5	5	--	--	19,67
Important	29,4	32	28,4	21	36,4	8	--	--	50,0	2	10,93
Somewhat important	17,4	19	17,6	13	18,2	4	12,5	1	25,0	1	5,13
Not very important	10,1	11	12,2	9	4,5	1	12,5	1	--	--	4,50
Not important at all	0,9	1	1,4	1	--	--	--	--	--	--	--
Abstain, No interest	0,9	1	--	--	4,5	1	--	--	--	--	--
No opinion	--	--	--	--	--	--	--	--	--	--	--
Don't know	0,9	1	--	--	--	--	--	--	25	1	--
Total	99,983	109	100	74	100	22	100	8	100	4	

Section - Technology

140. Is your company a trendsetter or follower?

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Industry follower, proven technology	**61,7**	87	69,6	64	20	5	75	6	76,9	10	27,09
Trendsetter, new technology	38,3	54	30,4	28	80	20	25	2	23,1	3	27,09
Total	100	141	100	92	100	25	100	8	100	13	

The DCS suppliers are clearly outside the boat. This may be caused because they have a very different perception of the client but rather that they question their own undertaking concerned by their ambiguous question .

All Groups

Description	Total		Project manager		Technologie department		Control engineer		Automation manager	
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS
Industry follower, proven technology	61,7	87	83,3	5	33,3	3	65,9	15	87,5	7
Trendsetter, new technology	38,3	54	16,7	1	66,7	6	34,1	29	7	1

Only DCS end users sort on project size.

Description	Total		Large		Medium		Small		Sigma
	%	ABS	%	ABS	%		%	ABS	ABS
Industry follower, proven technology	69,6	64	67,7	35	71,4	25	66,7	2	2,48
Trendsetter, new technology	30,4	28	32,7	17	28,6	10	33,3	1	2,56
Total	100	92	100	52	100	35	100	3	

Only DCS end users sort on functions 1.

Description	Total		Control engineer		System engineer		Technology Department		Automation manager	
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS
Industry follower, proven technology	69,6	64	65,0	26	100	6	33,3	3	83,3	5
Trendsetter, new technology	30,4	28	35,0	14	0	0	66,7	6	16,7	1

Only DCS end users sort on functions 2.

Description	Maintenaince manager		Project manager		Purchase manager		HQ consultant	
	%	ABS	%	ABS	%	ABS	%	ABS
Industry follower, proven technology	50	1	100	3	100	2	60	3
Trendsetter, new technology	50	1	0	0	0	0	40	2

Only DCS end users sort on project type

Description	Total		Migration		Extension		Replacement		Greenfield		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Industry follower, proven technology	69,6	64	83,33	20	66,8	14	69,6	16	58,3	14	10,39
Trendsetter, new technology	30,4	28	16,7	4	33,3	7	30,4	7	41.7	10	8,87
Total	100	92	100	24	100	21	100	23	58	24	

Only DCS end users sort on central organisation

Description	Total		Central department		Local department		Sigma
	%	ABS	%	ABS	%	ABS	Std
Industry follower, proven technology	69,6	64	68,4	39	71,4	25	2,12
Trendsetter, new technology	30,4	28	31,6	18	28,6	10	2,12
Total	100	92	100	57	100	35	

DCS vendors sort by vendor, All Groups

Description	Total		Honeywell		Emerson		Siemens		Yokogawa		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
Industry follower, proven technology	20	5	9,1	1	20	1	0	0	1	0	9,26
Trendsetter, new technology	80	20	90,9	10	80	4	100	4	4	100	43,92
Total	100	25	100	11	100	5	100	4	5	100	

141. When you buy hardware or software for a DCS system you will buy it at:

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
We would like to be a beta test site	1,6	2	1,1	1	--	--	12,5	1	--	--	8,06
After the first release of the product	21,7	28	23,6	21	23,8	5	12,5	1	10	1	7,26
After one year of the first release of the product	50,4	65	48,3	43	57,1	12	37,5	3	70	7	13,76
Later	26,4	34	27	24	19,1	4	37,5	3	20	2	
Total	100	129	100	89	100	21	100	8	100	10	

Section - Decision making techniques in the selection process

% Calculation (ABS item/ (sum I know this + I don't know this))

% I Use this/ Total numbers of respondents

142. Pareto analysis is a very simple technique that helps you to choose the most effective changes that you have to make. It uses the Pareto principle - the idea that by doing 20% of work you can generate 80% of the advantage by doing the entire job. Pareto analysis is a formal technique for finding the changes that will give you the biggest benefits. It is useful when many possible courses of action are competing for your attention.

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
I don't know this	29,8	34	34,2	27	0	0	0	0	42,9	3	22,52
I know this	70,2	80	65,8	52	100,0	18	100,0	6	57,1	4	22,52
I Use this	22,5	31	17,6	16	20,8	5	25,0	2	46,2	6	12,87
Total	100	114	100	79	100	18	100	6	100	7	
Total respondents		138		91		24		8		13	

143. Paired Comparison Analysis helps you to work out the importance of a number of options relative to each other. It is particularly useful when you don't have objective data to base this on. This makes it easy to choose the most important problem to solve, or select the solution that will give you the greatest advantage. Paired Comparison Analysis helps you to set priorities where there are conflicting demands on your resources.

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
I don't know this	48,4	59	49,4	41	0	0	0	0	55,6	5	30,40
I know this	51,6	63	50,6	42	100,0	12	100,0	5	44,4	4	30,40
I Use this	12,3	17	14,3	13	8,3	2	12,5	1	7,7	1	3,20
Total	100	122	100	83	100	12	100	5	100	9	
Total respondents		138		91		24		8		13	

144. Grid Analysis (also known as Decision Matrix analysis or Pugh Matrix analysis) is a useful technique to use when you have to make a decision. Decision matrices are most effective when you have a number of good alternatives and many factors to take into account. The first step is to list your options and then the factors which are important when making a decicion. Lay them out in a table, with options as the row labels, and factors as the column headings. Next; work out the relative importance of the factors in your decision. Show these as numbers. We will use these to weigh your preferences by the importance of the factor. These values may be obvious.

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
I don't know this	10,4	10	11,1	7	0	0	0	0	50,0	3	23,73
I know this	89,6	86	88,9	56	100	18	100	4	50,0	3	23,73
I Use this	60,1	83	62,6	57	62,5	15	66,7	6	53,8	7	5,40
Total	100	96	100	63	100	18	100	4	100	6	
Total respondents		138		91		24		9		13	

145. Cost/Benefit Analysis is a relatively simple and widely used technique for deciding when you want to make a change. As its name suggests, to use the technique; simply add up the value of the benefits of a course of action, and subtract the costs associated with it.Costs are either one-off, or may be ongoing. Benefits are most often received over time. We build this effect of time into our analysis by calculating a payback period. This is the time it takes for the benefits of a change to repay its costs.

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
I don't know this	10,8	10	11,1	7	0	0	0	0	50,0	3	23,73
I know this	89,2	83	88,9	56	75,0	18	100,0	4	50,0	3	23,73
I Use this	62,3	86	62,6	57	62,5	15	66,7	6	53,8	7	5,40
Total	100	93	100	63	100	18	100	4	100	6	
Total respondents		138		91		24		9		13	

146. Decision Trees are excellent tools to help you by making a choice between several courses of action. They provide a highly effective structure in where you can lay out options and investigate the possible outcomes of choosing these options. They also help you to form a balanced picture of the risks and rewards associated with each possible course of action. You start a Decision Tree with the decision that you need to make. Draw a small square to represent this towards the left of a large piece of paper. From this box: draw out lines towards the right for each possible solution, and write that solution along the line. Keep the lines apart as far as possible in order to expand your thoughts.

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
I don't know this	20,2	23	20,0	16	13,6	3	0	0	36,4	4	15,09
I know this	79,8	91	80,0	64	86,4	19	100,0	3	63,6	7	15,09
I Use this	23,9	33	24,2	22	16,7	4	66,7	6	7,7	1	26,13
Total	100	114	100	80	100	22	100	3	100	11	
Total respondents		138		91		24		9		13	

147. PMI stands for 'Plus/Minus/Implications'. It is a valuable improvement to the 'weighing pros and cons' technique used for centuries. PMI is an important Decision Making tool: The mind tools used so far in this section have focused on selecting a course of action from a range of options. Before you move straight into action on this course of action, it is important to check that it actually will improve the situation (it may actually be best to do nothing!) PMI is a useful tool for doing this.

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
I don't know this	54,0	61	50,0	39	56,5	13	71,4	5	87,5	7	16,70
I know this	46,0	52	50,0	39	43,5	10	28,6	2	12,5	1	16,70
I Use this	22,5	31	25,6	23	4,2	1	11,1	1	46,2	6	18,55
Total	100	113	100	78	100	23	100	7	100	8	
Total respondents		138		90		24		9		13	

148. Force Field Analysis is a useful technique for looking at all forces for and against a decision. In effect, it is a specialized method of 'weighing pros and cons'. By carrying out the analysis you can plan to strengthen the forces supporting the decision, and reduce the impact of opposition to it.

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
I don't know this	73,4	91	70,6	60	72,7	16	85,7	6	87,5	7	8,71
I know this	26,6	33	29,4	25	27,3	6	14,3	1	12,5	1	8,71
I Use this	9,4	13	8,9	8	4,2	1	11,1	1	23,1	3	8,05
Total	100	124	100	85	100	22	100	7	100	8	
Total respondents		138		90		24		9		13	

149. 'Six Thinking Hats' is an important and powerful technique. It is used to look at decisions from a number of important perspectives. This forces you to move outside your habitual thinking style, and helps you to get a more rounded view of a situation

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
I don't know this	73,3	96	75,9	66	66,7	16	85,7	6	87,5	7	9,65
I know this	26,7	35	24,1	21	33,3	8	14,3	1	12,5	1	9,65
I Use this	5,8	8	3,4	3	8,3	2	--	--	23,1	3	10,25
Total	100	131	100	87	100	24	100	7	100	8	
Total respondents		138		89		24		7		13	

150. Do you use an other tool? Please specify.

3 * Six Sigma Process;

3 * QFD;

2 * Boeren verstand /Common Sense;

1 * Cause and effect, Why-why;

1 * Data Historian, SPC, APC, Portal Solutions;

1 * Decision Making Framework;

1 * Experience;

1 * FMEA;

1 * Kepner Tregoe Analysis (same principle as Grid Analysis above);

1 * Mind Mapping;

1 * Monte Carlo simulation;

1 * Scenario Planning;

1 * Tool from CapGemini.

Section - Know DCS suppliers

Instructions Provided To Respondents

Please mark the field of the company's when you think about DCS suppliers product.

151. ABB Symphony (Harmony And Melody))

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
I know this company's product	26,5	44	22,3	23	34,3	12	33,3	3	31,3	5	5,46
I would select this company for a longlist	11,4	19	12,6	13	8,6	3	--	--	--	2	2,86
I would select this company for a shortlist	4,8	8	6,8	7	2,9	1	--	--	--	--	2,79
We bought a control system from this company	5,4	9	7,8	8	2,9	1	0	--	--	--	3,93
Total respondents		166		103		35		9		16	

152. ABB Contronic

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
I know this company's product	21,7	36	16,5	17	34,3	12	33,3	3	18,8	3	9,40
I would select this company for a Longlist	2,4	4	1,9	2	8,6	3	--	--	--	--	4,69
I would select this company for a shortlist	1,2	2	1,0	1	2,9	1	--	--	--	--	1,33
We bought a control system from this company	0,6	1	1,0	1	2,9	1	--	--	--	--	1,33
Total respondents		166		103		35		9		16	

153. ABB Master Mod 300

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
I know this company's product	19,9	33	18,4	19	22,9	8	33,3	3	18,8	3	6,95
I would select this company for a longlist	4,8	8	5,8	6	2,9	1	--	--	6,3	1	1,85
I would select this company for a shortlist	1,8	3	1,9	2	2,9	1	--	--	--	--	0,65
We bought a control system from this company	3,0	5	3,9	4	--	--	--	--	6,3	1	1,67
Total respondents		166		103		35		9		16	

154. ABB FreeLance 2000

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
I know this company's product	21,1	35	16,5	17	25,7	9	44,4	4	18,8	3	12,68
I would select this company for a longlist	4,2	7	3,9	4	2,9	1	22,2	2	--	--	10,90
I would select this company for a shortlist	2,4	4	1,9	2	2,9	1	11,1	1	--	--	5,05
We bought a control system from this company	3,6	6	5,8	6	--	--	--	--	--	--	--
Total respondents		166		103		35		9		16	

155. ABB Advant (MV, AC, OS)

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
I know this company's product	19,3	32	19,4	20	17,1	6	33,3	3	12,5	2	8,96
I would select this company for a longlist	7,8	13	8,7	9	2,9	1	--	--	18,8	3	8,04
I would select this company for a shortlist	5,4	9	4,9	5	5,7	2	--	--	12,5	2	4,19
We bought a control system from this company	7,2	12	10,7	11	--	--	--	--	6,3	1	3,13
Total respondents		166		103		35		9		16	

Comments/Notes:

ABB S800

156. ABB Proctonic

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
I know this company's product	10,8	18	9,7	10	8,6	3	22,2	2	12,5	2	6,20
I would select this company for a longlist	0,6	1	--	--	2,9	1	--	--	--	--	--
I would select this company for a shortlist	2,4	4	1,9	2	5,7	2	--	--	--	--	2,67
We bought a control system from this company	1,2	2	1,9	2	--	--	--	--	--	--	--
Total respondents		166		103		35		9		16	

157. ABB Operate IT

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
I know this company's product	15,1	25	10,7	11	17,1	6	44,4	4	18,8	3	14,87
I would select this company for a longlist	7,2	12	4,9	5	5,7	2	33,3	3	12,5	2	13,27
I would select this company for a shortlist	8,4	14	6,8	7	8,6	3	33,3	3	6,3	1	13,10
We bought a control system from this company	4,8	8	5,8	6	--	--	22,2	2	--	--	11,59
Total respondents		166		103		35		9		16	

158. ABB Produce IT

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
I know this company's product	10,8	18	5,8	6	17,1	6	44,4	4	25,0	4	16,26
I would select this company for a longlist	3,0	5	1,0	1	5,7	2	33,3	3	--	--	17,48
I would select this company for a shortlist	4,8	8	2,9	3	8,6	3	33,3	3	--	--	16,18
We bought a control system from this company	3,6	6	2,9	3	--	--	22,2	2	25,0	4	12,03
Total respondents		166		103		35		9		16	

159. ABB INFI 90

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
I know this company's product	21,7	36	20,4	21	25,7	9	22,2	2	12,5	2	5,59
I would select this company for a longlist	0,6	1	--	--	2,9	1	--	--	--	--	--
I would select this company for a shortlist	1,2	2	1,0	1	2,9	1	--	--	--	--	1,33
We bought a control system from this company	9,0	15	11,7	12	2,9	1	11,1	1	6,3	1	4,18
Total respondents		166		103		35		9		16	

160. ABB INFI-RTU

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
I know this company's product	11,4	19	5,8	6	20,0	7	33,3	3	12,5	2	11,80
I would select this company for a longlist	1,2	2	1,0	1	2,9	1	--	--	--	--	1,33
I would select this company for a shortlist	1,2	2	1,0	1	2,9	1	--	--	--	--	1,33
We bought a control system from this company	--	--	--	--	--	--	--	--	--	--	--
Total respondents		166		103		35		9		16	

161. ABB DCI system Six

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
I know this company's product	10,8	18	6,8	7	14,3	5	33,3	3	6,3	1	12,65
I would select this company for a longlist	1,2	2	1,0	1	2,9	1	--	--	--	--	1,33
I would select this company for a shortlist	1,2	2	1,0	1	2,9	1	--	--	--	--	1,33
We bought a control system from this company	1,8	3	1,0	1	2,9	1	--	--	--	1	1,33
Total respondents		166		103		35		9		16	

162. ABB Satt-line

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
I know this company's product	13,9	23	4,9	5	25,7	9	55,6	5	25,0	4	20,89
I would select this company for a longlist	1,8	3	--	--	2,9	1	11,1	1	--	--	5,84
I would select this company for a shortlist	2,4	4	1,0	1	2,9	1	11,1	1	6,3	1	4,45
We bought a control system from this company	1,2	2	1,0	1	--	--	11,1	1	--	--	7,17
Total respondents		166		103		35		9		16	

163. ABB Sattgraf

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
I know this company's product	12,7	21	3,9	4	14,3	5	44,4	4	6,3	1	18,69
I would select this company for a longlist	1,2	2	--	--	2,9	1	--	--	--	--	--
I would select this company for a shortlist	1,2	2	1,0	1	2,9	1	--	--	--	--	1,33
We bought a control system from this company	--	--	--	--	--	--	--	--	--	--	--
Total respondents		166		103		35		9		16	

164. ABB Satt-con

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
I know this company's product	12,7	21	7,8	8	17,1	6	55,6	5	6,3	1	23,09
I would select this company for a longlist	1,2	2	1,0	1	2,9	1	--	--	--	--	1,33
I would select this company for a shortlist	1,2	2	1,0	1	2,9	1	--	--	--	--	1,33
We bought a control system from this company	0,6	1	--	--	--	--	11,1	1	--	--	--
Total respondents		166		103		35		9		16	

165. Alstrom -lspa P320

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
I know this company's product	7,2	12	2,9	3	14,3	5	11,1	1	12,5	2	5,03
I would select this company for a longlist	1,2	2	1,0	1	--	--	--	--	--	--	--
I would select this company for a shortlist	--	--	--	--	--	--	--	--	--	--	--
We bought a control system from this company	1,2	2	1,0	1	--	--	--	--	--	--	--
Total respondents		166		103		35		9		16	

166. Emerson - Ovation

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
I know this company's product	16,9	28	12,6	13	28,6	10	--	--	25,0	4	8,37
I would select this company for a longlist	3,6	6	2,9	3	2,9	1	11,1	1	6,3	1	3,89
I would select this company for a shortlist	3,0	5	2,9	3	2,9	1	--	--	6,3	1	1,94
We bought a control system from this company	1,8	3	1,9	2	--	--	--	--	6,3	1	3,05
Total respondents		166		103		35		9		16	

167. Emerson (Fisher Rosemount) - RS3

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
I know this company's product	31,3	52	28,2	29	42,9	15	33,3	3	31,3	5	6,34
I would select this company for a longlist	3,0	5	1,9	2	2,9	1	11,1	1	6,3	1	4,15
I would select this company for a shortlist	1,8	3	1,9	2	2,9	1	--	--	--	--	0,65
We bought a control system from this company	6,6	11	8,7	9	--	--	--	--	--	--	--
Total respondents		166		103		35		9		16	

168. Emerson (Fisher Rosemount) - Provox

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
I know this company's product	31,3	52	31,1	32	42,9	15	33,3	3	6,3	1	15,61
I would select this company for a longlist	3,6	6	2,9	3	2,9	1	11,1	1	6,3	1	3,89
I would select this company for a shortlist	1,8	3	1,0	1	2,9	1	--	--	--	--	1,33
We bought a control system from this company	6,6	11	7,8	8	--	--	11,1	1	12,5	2	2,43
Total respondents		166		103		35		9		16	

169. Emerson (Fisher Rosemount) - WDPF 2

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
I know this company's product	15,7	26	13,6	14	22,9	8	11,1	1	12,5	2	5,33
I would select this company for a longlist	1,2	2	1,0	1	2,9	1	--	--	--	--	1,33
I would select this company for a shortlist	2,4	4	1,9	2	2,9	1	11,1	1	--	--	5,05
We bought a control system from this company	1,2	2	1,9	2	--	--	--	--	--	--	--
Total respondents		166		103		35		9		16	

Comments/Notes:

1 * Same system as Emerson Ovation see Q166

170. Emerson Process Management -DeltaV

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
I know this company's product	47,0	78	48,5	50	45,7	16	66,7	6	25,0	4	17,07
I would select this company for a longlist	31,3	52	35,0	36	20,0	7	55,6	5	18,8	3	17,15
I would select this company for a shortlist	33,7	56	37,9	39	14,3	5	55,6	5	37,5	6	16,92
We bought a control system from this company	23,5	39	28,2	29	5,7	2	33,3	3	31,3	5	12,78
Total respondents		166		103		35		9		16	

171. Fuji - MICREX-NX

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
I know this company's product	4,8	8	1,0	1	8,6	3	11,1	1	12,5	2	5,14
I would select this company for a longlist	0,6	1	v	--	2,9	1	--	--	--	--	--
I would select this company for a shortlist	0,6	1	--	--	2,9	1	--	--	--	--	--
We bought a control system from this company	--	--	--	--	--	--	--	--	--	--	--
Total respondents		166		103		35		9		16	

172. GE - Mark VI

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
I know this company's product	15,1	25	13,6	14	20,0	7	11,1	1	12,5	2	3,93
I would select this company for a longlist	5,4	9	3,9	4	8,6	3	--	--	12,5	2	4,31
I would select this company for a shortlist	3,0	5	2,9	3	2,9	1	--	--	6,3	1	1,94
We bought a control system from this company	6,0	10	5,8	6	--	--	22,2	2	12,5	2	8,25
Total respondents		166		103		35		9		16	

173. Hollysys- Hollias

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
I know this company's product	1,8	3	1,0	1	2,9	1	--	--	--	--	1,33
I would select this company for a longlist	--	--	--	--	--	--	--	--	--	--	--
I would select this company for a shortlist	--	--	--	--	--	--	--	--	--	--	--
We bought a control system from this company	--	--	--	--	--	--	--	--	--	--	--
Total respondents		166		103		35		9		16	

174. Honeywell - Experion PKS

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
I know this company's product	42,8	71	47,6	49	40,0	14	33,3	3	25,0	4	9,61
I would select this company for a longlist	28,9	48	36,9	38	20,0	7	22,2	2	6,3	1	12,55
I would select this company for a shortlist	31,3	52	37,9	39	20,0	7	33,3	3	12,5	2	11,73
We bought a control system from this company	33,7	56	42,7	44	14,3	5	22,2	2	31,3	5	12,22
Total respondents		166		103		35		9		16	

175. Honeywell - TPS

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
I know this company's product	38,0	63	42,7	44	40,0	14	11,1	1	18,8	3	15,61
I would select this company for a longlist	18,7	31	22,3	23	14,3	5	11,1	1	12,5	2	5,02
I would select this company for a shortlist	17,5	29	18,4	19	17,1	6	11,1	1	12,5	2	3,54
We bought a control system from this company	31,9	53	39,8	41	14,3	5	11,1	1	37,5	6	15,07
Total respondents		166		103		35		9		16	

176. Honeywell - Plantscape

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
I know this company's product	36,7	61	36,9	38	37,1	13	44,4	4	31,3	5	5,41
I would select this company for a longlist	11,4	19	12,6	13	11,4	4	22,2	2	--	--	5,92
I would select this company for a shortlist	7,8	13	6,8	7	11,4	4	11,1	1	--	--	2,59
We bought a control system from this company	18,7	31	22,3	23	11,4	4	11,1	1	18,8	3	5,55
Total respondents		166		103		35		9		16	

177. Honeywell - TDC 3000

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
I know this company's product	48,2	80	53,4	55	40,0	14	44,4	4	31,3	5	9,22
I would select this company for a longlist	17,5	29	20,4	21	11,4	4	11,1	1	12,5	2	4,39
I would select this company for a shortlist	16,3	27	18,4	19	17,1	6	--	--	6,3	1	6,70
We bought a control system from this company	42,2	70	57,3	59	11,4	4	11,1	1	37,5	6	22,36
Total respondents		166		103		35		9		16	

178. Honeywell - TDC 2000

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
I know this company's product	43,4	72	46,6	48	37,1	13	33,3	3	43,8	7	6,06
I would select this company for a longlist	6,0	10	6,8	7	5,7	2	--	--	6,3	1	0,54
I would select this company for a shortlist	6,0	10	4,9	5	11,4	4	--	--	--	--	4,65
We bought a control system from this company	19,9	33	27,2	28	5,7	2	--	--	18,8	3	10,82
Total respondents		166		103		35		9		16	

179. Honeywell - SMS

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
I know this company's product	20,5	34	18,4	19	31,4	11	11,1	1	12,5	2	9,27
I would select this company for a longlist	10,2	17	11,7	12	14,3	5	--	--	--	--	1,86
I would select this company for a shortlist	12,0	20	11,7	12	17,1	6	11,1	1	--	--	3,34
We bought a control system from this company	10,2	17	12,6	13	11,4	4	--	--	12,5	2	0,66
Total respondents		166		103		35		9		16	

180. Invensys - A2 System

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
I know this company's product	20,5	34	20,4	21	22,9	8	33,3	3	--	--	13,94
I would select this company for a longlist	8,4	14	9,7	10	2,9	1	11,1	1	6,3	1	3,70
I would select this company for a shortlist	6,6	11	6,8	7	2,9	1	22,2	2	6,3	1	8,64
We bought a control system from this company	1,2	2	1,0	1	--	--	11,1	1		--	7,17
Total respondents		166		103		35		9		16	

181. Invensys (Foxboro)- IA Series

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
I know this company's product	43,4	72	47,6	49	40,0	14	44,4	4	25,0	4	10,00
I would select this company for a longlist	21,1	35	25,2	26	11,4	4	33,3	3	12,5	2	10,54
I would select this company for a shortlist	16,3	27	21,4	22	2,9	1	33,3	3	18,8	3	12,54
We bought a control system from this company	18,1	30	23,3	24	2,9	1		--	31,3	5	14,65
Total respondents		166		103		35		9		16	

182. Invensys (Foxboro)- Spectrum

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
I know this company's product	27,1	45	26,2	27	37,1	13	22,2	2	12,5	2	10,20
I would select this company for a longlist	9,0	15	7,8	8	8,6	3	11,1	1	12,5	2	2,20
I would select this company for a shortlist	3,0	5	1,9	2	2,9	1	--	--	6,3	1	2,27
We bought a control system from this company	7,2	12	11,7	12	2,9	1	--	--		--	6,22
Total respondents		166		103		35		9		16	

183. Metso - Metso DNA

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
I know this company's product	10,2	17	9,7	10	11,4	4	11,1	1	6,3	1	2,37
I would select this company for a longlist	4,8	8	6,8	7	2,9	1	--	--	--	--	2,79
I would select this company for a shortlist	3,6	6	5,8	6	--	--	--	--	--	--	--
We bought a control system from this company	3,6	6	5,8	6	--	--	--	--	--	--	--
Total respondents		166		103		35		9		16	

184. Metso - Max DNA

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
I know this company's product	4,8	8	3,9	4	5,7	2	11,1	1	--	--	3,76
I would select this company for a longlist	1,8	3	1,0	1	2,9	1		--	6,3	1	2,68
I would select this company for a shortlist	--	--	--	--		--		--	--	--	--
We bought a control system from this company	1,2	2	1,0	1		--		--	6,3	1	3,73
Total respondents		166		103		35		9		16	

185. Metso - Damatic

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
I know this company's product	9,6	16	9,7	10	11,4	4	11,1	1	--	--	0,92
I would select this company for a longlist	1,2	2	1,0	1	2,9	1	--	--	--	--	1,33
I would select this company for a shortlist	0,6	1	1,0	1	--	--	--	--	--	--	--
We bought a control system from this company	3,0	5	4,9	5	--	--	--	--	--	--	--
Total respondents		166		103		35		9		16	

186. Metso - MAX

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
I know this company's product	4,2	7	2,9	3	5,7	2	11,1	1	--	--	4,17
I would select this company for a longlist	--	--	--	--	2,9	1	--	--	--	--	--
I would select this company for a shortlist	--	--	--	--	--	--	--	--	--	--	--
We bought a control system from this company	0,6	1	--	--	--	--	--	--	--	--	--
Total respondents		166		103		35		9		16	

187. Metso - Valmet XD

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
I know this company's product	13,9	23	13,6	14	14,3	5	33,3	3	--	--	11,20
I would select this company for a longlist	0,6	1		--	2,9	1	--	--	--	--	--
I would select this company for a shortlist	--	--		--	--	--	--	--	--	--	--
We bought a control system from this company	2,4	4	3,9	4	--	--	--	--	--	--	--
Total respondents		166		103		35		9		16	

188. Metso- Valmet Classic

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
I know this company's product	11,4	19	8,7	9	17,1	6	33,3	3	--	--	12,50
I would select this company for a longlist	0,6	1	--	--	2,9	1	--	--	--	--	--
I would select this company for a shortlist	--	--	--	--	--	--	--	--	--	--	--
We bought a control system from this company	1,2	2	1,9	2	--	--	--	--	--	--	--
Total respondents		166		103		35		9		16	

189. Mitsubishi- Diasys Netmation

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
I know this company's product	4,8	8	2,9	3	11,4	4	--	--		--	6,02
I would select this company for a longlist	0,6	1	--	--	2,9	1	--	--	--	--	--
I would select this company for a shortlist	0,6	1	--	--	2,9	1	--	--	--	--	--
We bought a control system from this company	--	--	--	--		--	--	--	--	--	--
Total respondents		166		103		35		9		16	

190. Rockwell Automation - Process Logix

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
I know this company's product	25,3	42	24,3	25	31,4	11	33,3	3	18,8	3	6,71
I would select this company for a longlist	8,4	14	7,8	8	5,7	2	22,2	2	12,5	2	7,35
I would select this company for a shortlist	5,4	9	3,9	4	5,7	2	11,1	1	6,3	1	3,09
We bought a control system from this company	4,8	8	7,8	8	--	--	--	--	--	--	--
Total respondents		166		103		35		9		16	

191. RTP Corporation -2300/2500

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
I know this company's product	5,4	9	3,9	4	8,6	3	11,1	1	--	--	3,67
I would select this company for a longlist	1,2	2	1,0	1	2,9	1	--	--	--	--	1,33
I would select this company for a shortlist	1,2	2	--	--	2,9	1	--	--	--	--	--
We bought a control system from this company	0,6	1	1,0	1	2,9	1	--	--	--	--	1,33
Total respondents		166		103		35		9		16	

192. Siemens - PCS-7

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
I know this company's product	36,7	61	35,0	36	40,0	14	55,6	5	25,0	4	12,75
I would select this company for a longlist	19,9	33	16,5	17	17,1	6	55,6	5	25,0	4	18,41
I would select this company for a shortlist	12,7	21	10,7	11	11,4	4	33,3	3	12,5	2	10,92
We bought a control system from this company	14,5	24	17,5	18	5,7	2	22,2	2	12,5	2	7,06
Total respondents		166		103		35		9		16	

193. Siemens- Teleperm

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
I know this company's product	20,5	34	13,6	14	37,1	13	55,6	5	12,5	2	20,65
I would select this company for a longlist	3,6	6	1,9	2	5,7	2	--	--	6,3	1	2,35
I would select this company for a shortlist	2,4	4	1,9	2	5,7	2	--	--	--	--	2,67
We bought a control system from this company	4,8	8	6,8	7	2,9	1	--	--	--	--	2,79
Total respondents		166		103		35		9		16	

194. Siemens - S5

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
I know this company's product	33,1	55	35,0	36	34,3	12	55,6	5	18,8	3	15,10
I would select this company for a longlist	4,2	7	4,9	5	2,9	1	--	--	6,3	1	1,71
I would select this company for a shortlist	3,6	6	2,9	3	2,9	1	11,1	1	--	--	4,75
We bought a control system from this company	12,7	21	16,5	17	2,9	1	22,2	2	6,3	1	8,97
Total respondents		166		103		35		9		16	

195. Siemens- S7

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
I know this company's product	40,4	67	40,8	42	37,1	13	55,6	5	31,3	5	10,36
I would select this company for a longlist	13,9	23	15,5	16	2,9	1	33,3	3	12,5	2	12,72
I would select this company for a shortlist	12,0	20	12,6	13	2,9	1	44,4	4	6,3	1	19,04
We bought a control system from this company	18,7	31	21,4	22	2,9	1	33,3	3	25,0	4	12,87
Total respondents		166		103		35		9		16	

196. Siemens - Win CC

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
I know this company's product	24,7	41	22,3	23	31,4	11	44,4	4	12,5	2	13,59
I would select this company for a longlist	7,2	12	8,7	9	2,9	1	22,2	2	--	--	9,93
I would select this company for a shortlist	4,8	8	4,9	5	2,9	1	22,2	2	--	--	10,65
We bought a control system from this company	10,2	17	11,7	12	2,9	1	44,4	4	--	--	21,92
Total respondents		166		103		35		9		16	

197. Supcon - ECS-100

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
I know this company's product	3,6	6	1,0	1	8,6	3	11,1	1	--	--	5,28
I would select this company for a longlist	--	--	--	--	--	--	--	--	--	--	--
I would select this company for a shortlist	--	--	--	--	--	--	--	--	--	--	--
We bought a control system from this company	--	--	--	--	--	--	--	--	--	--	--
Total respondents		166		103		35		9		16	

198. Supcon - JX-300X DCS

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
I know this company's product	4,2	7	1,9	2	8,6	3	11,1	1	--	--	4,73
I would select this company for a longlist	--	--	--	--	--	--	--	--	--	--	--
I would select this company for a shortlist	--	--	--	--	--	--	--	--	--	--	--
We bought a control system from this company	--	--	--	--	--	--	--	--	--	--	--
Total respondents		166		103		35		9		16	

199. Toshiba - TOSDIC CIE DS

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
I know this company's product	6,6	11	4,9	5	11,4	4	11,1	1	--	--	3,71
I would select this company for a longlist	0,6	1	--	--	2,9	1	--	--	--	--	--
I would select this company for a shortlist	0,6	1	--	--	2,9	1	--	--	--	--	--
We bought a control system from this company	--	--	--	--	--	--	--	--	--	--	--
Total respondents		166		103		35		9		16	

200. Yamataka - A-MC

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
I know this company's product	8,4	14	6,8	7	14,3	5	11,1	1	--	--	3,76
I would select this company for a longlist	3,0	5	3,9	4	2,9	1	--	--	--	--	0,73
I would select this company for a shortlist	1,8	3	2,9	3	--	--	--	--	--	--	--
We bought a control system from this company	1,8	3	1,9	2	--	--	--	--	6,3	1	3,05
Total respondents		166		103		35		9		16	

201. Yokogawa - Centum

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
I know this company's product	34,9	58	33,0	34	34,3	12	44,4	4	37,5	6	5,12
I would select this company for a longlist	13,9	23	16,5	17	8,6	3	--	--	12,5	2	3,97
I would select this company for a shortlist	15,7	26	16,5	17	8,6	3	22,2	2	18,8	3	5,79
We bought a control system from this company	15,1	25	18,4	19	--	--	11,1	1	31,3	5	10,19
Total respondents		166		103		35		9		16	

202. Yokogawa - CS

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
I know this company's product	25,9	43	23,3	24	28,6	10	44,4	4	25,0	4	9,66
I would select this company for a longlist	12,7	21	14,6	15	8,6	3	33,3	3	--	--	12,92
I would select this company for a shortlist	10,2	17	10,7	11	5,7	2	22,2	2	6,3	1	7,67
We bought a control system from this company	12,0	20	15,5	16	--	--	--	--	25,0	4	6,69
Total respondents		166		103		35		9		16	

203. Yokogawa - Stardom

Description	Total		End user		DCS vendor		System Integrator		Engineering firm		Sigma
	%	ABS	%	ABS	%	ABS	%	ABS	%	ABS	ABS
I know this company's product	12,7	21	9,7	10	20,0	7	22,2	2	6,3	1	7,77
I would select this company for a longlist	5,4	9	6,8	7	2,9	1	11,1	1	--	--	4,13
I would select this company for a shortlist	5,4	9	6,8	7	2,9	1	--	--	--	--	2,79
We bought a control system from this company	3,6	6	2,9	3	2,9	1	--	1	6,3	1	1,94
Total respondents		166		103		35		9		16	

Section - Remarks and tips for the researcher

204. Do you have any remarks and tips for the researcher?

Names are removed, but the remarks are cluster by respondent groups.

From end-users

1- Min spare requirement for stock on site;
2- Standard configuration for all application;
3- Easy in-house system support.

Add to Business case reasons - major plant expansion exceeds capacity of existing system. This is often the case and obviates the need for other business justifications since an upgraded system is as necessary as wheels on a car. (When was the last time you were asked to provide a Business case for why your new car actually needed wheels?)

Beste Willem, Mooi formulier! Ik heb de antwoorden ingevuld naar aanleiding van het project bij de (plant name removed). In eerste instantie hadden wij inspraak waarin het systeem aan moet voldoen en vervolgens werd puur op basis van kosten bepaald welk systeem gekozen werd. Nu zat daar ook een verschil in van 25% (€300.000,-) tussen Honeywell en Siemens.

DCS selections are very rarely based on technical requirements. I have seen DCS decisions been made solely by the opinion of one person who has a major say in the company - and it was the wrong decicision. Other companies base their selection on historical upgrade paths - never changing suppliers but opting to go through a costly migration path.

DCS Vendors know each others products, this makes their pricing very competetive when they examine your specifications and they are able to vary their pricing/delivery/etc. to advantage during the bid process. There are many hidden costs and cost implications that the owner would be confronted with later in the implementation process. Vendors know this and use it to their advantage in their engineering and configuration and therefore unforseen cost overruns can be a major problem. Sometimes there are known weaknesses in systems which Vendors are never eager to expose or that they know how to avoid these becoming evident during the bidding

process. Keep in mind that the system should be engineered / installed for complete replacement if this becomes necessary at the end of the lifecycle or that maintenance/maintenance support by Vendor becomes a problem.

Develop selection critaria around:

1- Standardization and stable operation;
2- Visualization and HIS specification;
3- Process monitoring, data processing and storage;
4- Communication with existing PLC (serial links);
5- Apply Six Sigma methodology and toolkits (FMEA, QFD);
6- TPM (to support Reliability Manufacturing);
7- Remote monitoring (via Web).

For the selection of a new DCS system we make a choise out 3or 4 vendors. This vendors are selected and classified by specialists from Shell. We have default preference list of DCS vendors. In all other cases we implement extensions on existing systems.

I have a technical paper that will be presented in ISA EXPO 2007 concerning the same scope of research, I think it may help you. the paper title is ‘ An AHP-based DSS for Control System selection in Petrochemicals and oil and gas industries.

I answered the questions as good as possible. I am working in the maintenance departmend so we do not buy new systems we only maintain them and if they are obsolesence we upgrade them.

I thought the questions around Business case were somewhat fuzzy in respect to selecting a DCS system when building a grass roots facility. In such as case, the Business case is really the decision to build a new plant. Building a new facility is really the only Business case in this situation.

I want to know the the technical selection criteria in each item (table) for the DCS system. It can help us to verify the result of our EPC comparison and technical clarification.

If a Company standardizes on a DCS vendor as our Company did for many years then that lessens the ongoing costs as engineers re-locate from one Plant to another they don't have to learn a new technology and can be productive in a very short period of time.

In practice we have a shortlist (Yokogawa, Honeywell, Invensys, Emerson, Siemens) The one wich 'buys' the project, mostly under market price, gets the job and we are stuck to that supplier for many years in good and bad. We see a automatic rotating system and we have therfore a variarity of installed base.
The desicion of chosing a type/make of DCS depends strongly on the presentation skills of the vendor.
In the systems list above are systems, that are not on market currently, because there are are not supplied more e.g. WDPF2, Damatic. On the other hand, some barelly new systems are missing - e.g. Siemens T3000, which we chosen in our last case.

In the table where you ask to sum up to 100 % an automatic addition would be helpfull, because normaly you wan't take out a calculator within a survey

Inprinciple we have selected our system based on Total Cost of Ownership. It is one of the biggest DCS sytems in the world (field wide system) developed to handle 1E6 tag numbers. The selection was highly based on robustness and 25 years life cycle costs including upgrades and migrations. The supllier not only maintain the hardware and the system software but also the application software.

Interesting survey, but sometimes it would help, if headlines are allways visible (scoll down with the lines of the different tables).

Involved people in decision: Not on the list was corporate engineering group. The longlist was reduced to a shortlist by our corporate engineering staff. The end users could choose from that list.

It seems your survey is targeted to the selection process when in fact you did not really consider a migration strategy. For example, when a site has multiple DCS vendors at the site the decision basis most likely will include an ability to easily migrate from old technology to new technology.

Further, there becomes a break point where ‘rip-and-replace’ becomes more viable. But what is the break point. I would be interested in knowing that.

Local knowledge and project approach is very important.

Many questions more of the same info.

Migration of our DCS was done without any production loss. A special tool has been developped to migrate each analog and digital point. It was developped by Honeywell and our own engineers and it’s called ‘hot cut over tool’. The ‘on the run’ migration processmade the decision a lot easier. It took one year to migrate 7 workstations and 8 controllers.(1400 loops))

Much of the DCS selection criteria within our corporation is driven by a desire to standardize this environment. We have a chosen vendor, and tend to utilize their products, so the selection process is not as broad as suggested in this survey.

My tips are as follows: Always choose a proven technology, bear in mind the life cycle cost, After sale services is very important, Choose an open sytem, that can be migrated to other technologies, or communicate with them, A system should be easy to use and easy to maintain, Initial cost could be higher but worth it in the long run.

Q. 109 ... 139 not able to answer; hardly any relevance in our business as we deal with main suppliers of DCS systems only who can handle all listed issues.

Now, my personal priority for choice of the DCS is in the tools included for maintenance, ex: Field device asset management and loop analysis.

Question 109 110 and 111 are not clear what the researcher wants to know.

We did not use a 3 list system. The vendor was really not a crucial as the implementation methods and standards. The major driver to choose the vendor we chose was installation logistics (minimizing process down time) that I did not see in your survey, the number two item was life

cycle plus one cost (installation and support and the first replacement added together). We had great difficulty getting management feed back or meaningful input.

We have attempted to define a single DCS vendor for the company, I have attached bellow a high level criteria we used for that. We did not in the end got he single vendor route, our sites have several systems and the cost of migration is not justified.

1. Determine the purpose of the exercise. Get clarity on the mandate and authority. Determine required task force membership as well as format and timing for final report.

2. Define the corporate process control strategy. System installation standards (manufacturing systems stratification, marshalling practices, rack room design) , life cycle planning. Hardware, software and firmware policies. Integration practices (drives, QCS, BMS, information system, advanced controls, skids) and application standards (communication protocols, graphics, interlocking and alarms).

3. The business and logistic considerations. Define the company wide migration plan to the platform with total costs and time line. Total costs need to include infrastructure , engineering etc. A single third party should provide these estimates.

4. Define the life cycle plus one cost of the system. That is the cost of the system (from item 3) plus it's refresh cycles (operating system software, stations, server, controllers, IO, networking, upgrade costs) plus any licensing fees. Also estimate the cost to upgrade the system completely to the next generation based on the infrastructure provided (rack rooms, marshalling) as well as the platforms migration options.

5. Finally develop a criteria based on the above items allows vendors to present their proposals and our estimates to be prepared.

6. Test the criteria with management and have vendors do presentations in response to the criteria. Have the third party prepare the estimate (high level for each option). Apply collected data to criteria charts. Take the resulting charts, estimate and the resulting vendor recommendation and prepare a report. Present the report back to the task force. Replace those who cannot live with the results? Present the report.

7. If approved assemble a ‘control upgrade initiative’ task force to manage all major controls projects or the controls aspect of major projects and assure consistent deployment.

Siemens - Moore APACS is not on the list.

System shall be expandable, future proof.

Take into account that I have given the answeres from a position as proces control engineer, maintenance engineer proces contol and plant maintenance manager. In these tree area’s i have build up exprience.

This is a good research topic.

This is a survey which takes a lot of time. Technical decisions are made on judgment of the people who are fully informed and have responsibility to work with it. For me it was important to know what the system was able to do now and future abilities. Therefore it is important that the supplier is financially strong and has enough influence that the software is able to communicate with secondairy supplier software
Financial the decisions taken depend mainly on initial cost including training etc. and the long term cost. We tried to get cost (maintenance for hardware and software) guaranteed long term. Because when you choose a system you are nailed for a long time with that supplier.

Too extensive

Too long survey, I could not even complete

Total Cost of Owneship is very much in focus in my company. This is good when selecting modern DCS system wehe a lot of the cost come in the operations phase and not in the project phase. Software maintenance cost, hardware renewal are things that hit the fixed cost budget. We (the gurus) have talked about it for years. Plant managers ar now seing the cost apear on their budgets. We have succeded with handover of maintenance contracts from project to operations.

Trained manpower with vendor important for successful commissioning of the system.

Vendor support required for at least 15 years for the product.

We are doing DCS selections as stated above. We have agreements with three major vendors. The contracts have been balanced out such that the initial investment and lifecycle cost will be comparable.
For a project the selection is made base on:

1- The installed system (of one of the three) if an expansion project is taken place;
2- Competitive quotation for migration and Greenfield projects among the three pre-selected vendors;
3- Business case (INTEGRAL 10 YEARS COST) based on competitive bids if another system is installed and needs to be migrated;

Other factors that are taken into consideration:

1- local presence of the vendor for the specific country of the project (hardly ever a discriminator with our major vendors;
2- Provenness of the solution for the specific system/type/release for the project if it is a special application.

Global commercial contracts are in place, nevertheless competitive bidding is done to cope with the dynamic market situations (eg Asia Pacific) and to make the services part of the bid as fit-for-purpose as possible.
Experiences show a 30% difference in overall initial cost taking this approach.

Long time ago we did the DCS evaluations on all types of criteria. This always took a very long time and ended up in a equal score for the major vendors. Time can better be spend in setting up the requirement specification and evaluating the quotation to get it aligned with the expectations.

We did the evaluation once in 2006 for all corporate sites worldwide. We have a global standard. We do not do this for each project. For us, the TDC 3000 systems in use are near end-of-life, and this is the Business case to migrate. We are not expecting to do this again for at least five years.

We use only one DCS, Honeywell HPMs in a TDC/TPS/Experion environment. We never think about installing any other DCS, Why? Well in 1989 when we decided on TDC it was because Honeywell had a track record of never leaving customers behind in the obsolesence race. Also Process Control was an important segment in their business and in our opinion they were unlikely to leave the business. This is unlike our first supplier Taylor. a lot of the questions are not relevent. The key is TCO or Total Cost of Ownership. when we built the 150MW CHP plant in 2005 we merely added 3 HPMs to one UCN , a redundant AM/App node for the integration to Mark VI.

You seem so be unaware of the significant impact EPCs have on DCS decision making. There biggest concern is completing the project on schedule. Leading to this are familiarity, track record of vendor, vendor support, not excessively new technology.

Your options 'I don't know this', I know this', 'I use this' leaves out 'Information to use this method is not available'.
Many of the cost input you need to answer your questions are simply not available. NOBODY knows the operating cost.
Invensys Spectrum is late stone age.

From engineering firm

Supplier needs to have a good combination of technical sales support team to educate the end users about their products and its usefulness for the users' business scenario. 2. It is of utmost imporatnce to provide after sales support to end user with shortest response time. 3. The quality of system engineering and design of Human Mchine Interface is a major criteria to attract the end user.

ABB Control Systems Industrial IT 800xA > this DCS was selected in my case Advant OCS with Master SW Advant OCS with MOD 300 SW Compact Products 800 Freelance 800F Safety SATT Symphony DCI System Six Symphony Harmony INFI 90 Symphony Melody.

Not all is applicable for an Engineering contractor. depending on the client needs we select. Each job different criteria.

From system integrator

A selection criterium i missed was ‘current position on life-cycle line’ for tco determination this is very important at selection of a new system. to find the system that is new AND proven technology.
A selection criterium I missed was ‘Vendor company profile and local presence’.
A selection criterium I missed was ‘Vendor willingness to cooperate with system integrators’ usually this is very low but important for us.

From DCS vendor

As DCS vendor I do appriciate your questionaire and effort! It is correctly structured and approaches different point of views. The questions are mostly meant for end-users, I tried to fill it out correctly keeping some recent projects in mind.

CENTUM is the family name. CENTUM CS is a predecessor of the latest version: CENTUM CS 3000. Success!

DCS Supplier is one of the categories of survey respondent, and I fall in that category, yet most of the questions are only applicable to end users or engineering contractors involved in automation system selection. I question the value added by having DCS suppliers fill in this survey; the value could be negative due to ignorance or lack of objectivity. In fact I gave up part-way through the survey as I was not sure I could meaningfully contribute further.

I am not sure vendors every fully understand the selection criteria. I also perceive that human perceptions and bias have a role to play in selection.

I did not understand the ‘Business Case Reason’ section under question 108, hence I did not complete. Importance of Business case (112-...) This was difficult to answer with the choices given because there were many things that were VERY important, but because they are so intangible, it was difficult to rate them as a ‘knock out’ or other ‘hard’ decision criteria. Hence, I abstained on these. I would have preferred to answer ‘Extremely important but no good metric exists for evaluating.’ And marginal metrics exist for evaluating many of the others, therefore I did not differentiate in importance significantly.

I don't actually select process control systems as I work for a DCS vendor. I answered based on my previous experience as a customer. Note that this experience was 15 years ago.

I would screen out the inputs from people like me - we are bound to be biased. Most of the insights will come from people making decisions for operating companies.

In the vendor evaluation I was missing the systems and process availability as a reason to choose a system. In case of RTP, this is an important reason for customers to select RTP.

Make a difference between projects that are decided by the end-user and those that are decided by the contractor.

The enquete is way too complex and long. I believe that many of my answers are not always fully thought through because of this.

The intent of this survey is excellent; it is an important topic that is difficult to understand. However, based on my assessment of how respondents will respond, I would have doubts about the reliability of the results. Many of the key decision-makers and influencers who have the most knowledge would not spend the time it takes to fill in this survey.

The most important criteria for selection of Automation System Sulutions should be driven by the supplier 's 1. 'ability to engage' in the economic return or ROI of the investing company 2. 'ability to partner' in the ongoing business impact of the implemented Automation System Solutions during their Life Cycle.

Very interesting study. Unfornately a bit difficult to fill in (e.g. Involved people in the selection process: when scrolling, you do not see the colums any more: which was not,/minor/major/veto).

Your questions are for DCS-users and not for DCS-Suppliers, so many of the questions are difficult to answer for us. We are DCS-supplier with a system called: PROCOS. The system is primary for the pharmaceutical, regulated area where you need to comply with the full S88 Batch standard and 21CFR Part11.