

**Supplementary table.** Overview of the results from the self-assessment of current risk management (RM) practices.

Category	Aspect	Enterprise RM Averages				Product RM Averages				Process RM Averages	
		Company A n = 2		Company B n = 2		Company A n = 4		Company B n = 4		Company A n = 2	
		Level	Certainty	Level	Certainty	Level	Certainty	Level	Certainty	Level	Certainty
I. Organizational Design Experience	The group of people carrying out RM activities is familiar with key technologies	8	8	7	7	8,3	7,5	7,3	6,3	8	8,5
	The group of people carrying out RM activities is familiar with the supply chain	8	8	5	8	5,8	6,8	6,3	6,8	6,5	7
II. Risk Management Personnel and Resources	Employees are motivated to perform/implement RM	5	9	5,5	7,5	6,3	6,8	6,3	7,3	6,5	8,5
	RM has available, qualified experts to implement the process	7,5	10	4,5	5	6,8	6,5	7,8	8,5	9,5	9
	There are sufficient resources (money, time etc.) and personnel to conduct RM	6	10	6,5	6,5	5,8	6,0	6,3	7,8	5,5	8,5
III. Tailoring and Integration of the Risk Management Process	RM is tailored/adjusted to the specific needs and preconditions of the company and its parts (ISO)	5,5	3	6,5	6	8,0	7,3	7,3	5,8	7,5	7
	RM is performed throughout all phases of the product innovation process	n/a	n/a	n/a	n/a	7,3	6,3	5,8	7,3	n/a	n/a
	We coordinate and integrate RM activities of different functions and across the hierarchy	6,5	10	8	7,5	5,3	5,0	5,5	6,8	8,5	8,5
	RM is integrated with risk management processes on other levels	7	10	5	7,5	5,0	6,7	5,3	6,0	6,5	7,5
	The RM process is effectively integrated with other management processes	7,5	10	4,5	8	6,0	7,3	6,8	6,8	5,5	7,5
	RM teams are cross-functional and cross organizational	8,5	7	7,5	8,5	6,3	8,7	7,3	7,3	7,5	8
	Risks and RM activities are communicated to stakeholders	9	10	6,5	7	7,3	8,3	7,8	7,0	7	8
	RM is transparent and inclusive towards all stakeholders (ISO)	6,5	10	6	8	6,0	6,7	6,3	6,5	6	8
	RM in general is an integral part of all organizational processes (ISO)	7,5	7	6	8	5,7	6,7	6,8	7,0	6,5	7,5
	There are go/no-go decisions made based on risk assessments	5	5	8,5	8,5	7,3	7,7	7,3	7,3	7,5	7,5
IV. Risk-Based Decision Making	Resources are allocated to address the largest risks as early as possible	6,5	6	8	7,5	7,3	7,3	6,0	6,5	8,5	8,5

V. The relation between risk management and goals and strategy	The upside of risk (opportunities) is systematically and effectively included in risk management	3,5	8	4,5	7,5	4,7	6,0	5,8	6,8	8	8
	Forecasts/ projections (e.g. cost, schedule, performance) are adjusted based on risk assessment	5,5	6	7	8	5,0	6,7	6,0	6,3	8	8,5
	The results of the risk analysis are considered in making trade-offs	3,5	-	8,5	8,5	5,3	7,0	7,0	6,0	7,5	8
	Decisions are made based on risk-benefit trade-offs	5,5	6	6,5	8	6,3	7,0	6,0	6,3	7,5	8
	Risk-benefit trade-offs are used systematically	3	3	6,5	7,5	5,0	6,0	5,8	5,8	6	6,5
	Contracts are derived from detailed cost risk assessments	5,5	3	6,5	3,5	6,0	6,3	5,3	5,3	n/a	n/a
	Risks are escalated to according to guidelines	8	9	5	8,5	6,3	7,3	6,0	6,5	8,5	9
	RM is a central part of decision making (ISO)	9	7	5	6,5	5,0	5,3	7,0	6,3	8,5	9
	Identified risks are quantified on scales for probability and impact, e.g. 1-5	9	10	9	8	9,0	9,3	7,3	6,8	10	10
	The impacts of risks are quantified using cost as a dimension	7,5	7,5	8	7	8,0	7,3	6,8	6,5	2,5	8
	The impacts of risks are quantified using technical performance or quality as a dimension	5	6,5	4,5	5	8,8	8,3	7,3	7,5	6,5	7
	The impacts of risks are quantified using schedule as a dimension	6,5	6,5	4,5	5	6,8	7,8	7,8	7,5	3,5	6
	Before they are implemented, risk mitigation actions are evaluated based on the reduction of impact or likelihood	6	5	6,5	7,5	6,0	8,3	6,5	7,3	8	8,5
	Risk assessments are used to set more realistic or achievable objectives	3,5	5	4,5	7,5	6,0	6,7	6,3	6,8	6	6
	Business areas create long-term action plans to meet risk management goals	8	8	4	6,5	n/a	n/a	n/a	n/a	n/a	n/a
	Organizational and business area goals are documented, measured, reported, and managed	9	10	7,5	7,5	n/a	n/a	n/a	n/a	n/a	n/a
	Risk assessments are used to determine potential effects (i.e. losses or gains) on goals	6,5	8	5	7	n/a	n/a	n/a	n/a	n/a	n/a
	Business units report on how external and internal events impact their business models and strategic goals	7,5	9	7,5	6	n/a	n/a	n/a	n/a	n/a	n/a
	Organizational goals are tied to specific performance measures	8,5	10	7,5	6,5	n/a	n/a	n/a	n/a	n/a	n/a
	Employees understand the potential effects of the organization's top risks on important strategic goals	4,5	7	4,5	5	n/a	n/a	n/a	n/a	n/a	n/a
	RM is a formal part of goal/requirement setting	6	6	4	4,5	n/a	n/a	n/a	n/a	n/a	n/a

VI. Specific mitigation actions	The implications of lower level risks on high level risks and vice versa are considered and acted upon	7	8	7	7,5	7,7	7,0	5,5	5,5	7,5	7
	Self-assessments, continuous improvement and implementation of best practices are used	7,5	9	6,5	7,5	6,3	6,0	6,5	6,0	9	9,5
	Standard work/processes are defined to increase process reliability	9	10	8	8	7,0	5,8	7,5	7,5	8,5	8,5
VII. Monitoring and review	Risks are regularly re-assessed according to guidelines, e.g. after specific events or a certain time	9	10	4,5	6,5	6,3	7,0	6,8	6,3	7,5	9,5
	The RM process is regularly reviewed and improved	6,5	4	4,5	5	5,7	7,7	6,8	7,3	6,5	8,5
	RM is dynamic, iterative and responsive to change (ISO)	8	8	5,5	4	4,8	5,3	7,0	7,5	7	7
	A formal feedback system is used to monitor the execution of risk mitigation actions	5	8	7,5	3,5	6,0	7,3	7,0	7,3	4	6,5
	Risk mitigation plans are used for monitoring	8	8	7	4	6,7	7,0	5,8	7,3	4	6,5
	An early warning system is used to track critical risks and decide on activating mitigation measures	5	8	6	3,5	5,0	6,3	6,5	7,0	3	6,5
	Tracking of error/issue/failure rates is used as a key performance indicator to track risks	6	6	8	6	5,0	5,7	7,8	7,8	5	8
VIII. Remaining ISO Risk Management Principles	RM explicitly addresses uncertainty (ISO)	7	-	5	3,5	6,3	6,5	7,0	7,3	5,5	7,5
	RM is systematic, structured and timely (ISO)	8	10	5	4,5	6,8	6,5	7,0	6,3	8	8,5
	RM is based on the best available information (ISO)	7	9	8	6,5	7,7	7,3	7,8	7,8	8,5	8,5
	RM takes human and cultural factors into account (ISO)	7	9	7,5	6,5	3,3	3,3	7,8	8,0	6,5	8,5
	RM creates and protects value (ISO)	8	9	8	6,5	5,0	4,8	8,3	8,3	9	9,5
	RM facilitates continuous improvement in the organization (ISO)	8,5	10	7,5	6,5	3,7	4,7	7,0	6,8	10	9
IX. Sustainability Risk Management	Societal trends, relevant for the business, are identified, monitored, and considered in risk management	4,5	8	7	6,5	3,5	4,3	6,5	6,8	5	5
	There is a clear understanding of what sustainability risks are	5,5	7	5	7	3,8	4,8	4,3	5,8	5	7
	Sustainability risks are systematically identified, assessed and treated	7	9	3,5	5,5	3,5	4,5	5,0	6,3	4	4
	The connections between sustainability risks and other risks are actively identified and managed	7	8	2	5	2,8	3,5	4,3	6,0	4	4
	Sustainability risk management includes both environmental and social aspects	7	8	6,5	7,5	2,8	3,3	5,3	6,3	4	4