

Dmitry Chernov

**Model of intra-organizational
communication about technical and
production risks to prevent
technological accidents before they
occur in large critical infrastructure
companies**



HANDBOOK

Risk 
COMMUNICATION

Dmitry Chernov

**MODEL OF INTRA-ORGANIZATIONAL COMMUNICATION
ABOUT TECHNICAL AND PRODUCTION RISKS TO PREVENT
TECHNOLOGICAL ACCIDENTS BEFORE THEY OCCUR IN LARGE
CRITICAL INFRASTRUCTURE COMPANIES**

Handbook

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CONTENT

Summary	4
About the author	5
Intellectual right	5
The problem of concealment of technological risks in large critical infrastructure companies	6
How to solve the problem of hiding information about risks in practice in the operation of a critical infrastructure company: a model of intraorganizational communication about safety and technological risks to prevent technological accidents before they occur	7
Scheme of consequential actions for implementation of this model into the operation of large critical infrastructure company	9
Step #1. Conducting a seminar on management decisions and communications in the event of major accidents for owners, top management and managers of industrial enterprises	9
Step #2. Brief presentation of the model to the owners, CEO and key senior managers of the critical infrastructure company	11
Step #3. Selection of industrial sites where the model will be implemented first	13
Step #4. Training of owners, senior management and directors of industrial sites selected for the first stage of implementation	13
Step #5. Creation of an algorithm for solving reported problems	14
Step #6. Creation of internal corporate mobile application	16
Step #7. Conducting seminars at industrial sites	18
Step #8. Assessment of the criticality and urgency of issues reported during the seminars. Ranking problems. No penalties for disclosure of critical issues. Solving serious and critical issues highlighted	19
Step #9. Presentation of resolved problems. Public awarding of employees whose proactive communication has prevented emergencies. Launching the mobile app	21
Step #10. Solving problems reported via the mobile app. Active demonstration of the most successful examples	21
Assessment of results of the first stage of implementation. Further steps for wider implementation across the company	22
Results from the implementation of the model	23
Potential directions for further development	24

SUMMARY

This publication provides a brief description of the model (process) for building a system for reporting information about technical and production risks within a large critical infrastructure company in order to prevent technological accidents before they occur.

When investigating some major accidents, it turns out that before the accident, ordinary employees and lower-level managers had observed deviations in the operation of equipment and other violations of regulatory documentation governing the operation of critical infrastructure facilities. But for various reasons, these employees at the bottom of the corporate hierarchy were hesitant to take preventive action by disclosing their observations and concerns to higher-ups. As a result, some avoidable accidents were not prevented in time. Because the owners and top management of these companies learned about the violations and the associated risks that had taken place only after the accidents, they were unable to make the decisions that could have prevented critical developments at the industrial sites entrusted to them.

The purpose of this publication is to describe a universal model for setting up a system in large critical infrastructure companies to allow the immediate reporting of technical and production risks from ordinary employees to top management, in order to prevent emergency situations developing.

The mission of the model is the prompt transmission of high-quality information about the critical risks of production sites and pre-emergency situations along the management hierarchy of a critical infrastructure company, to prevent risks from escalating into full-blown emergencies.

The main objective of this model is for top management to receive early signals about pre-emergency situations and critical problems from a small group of trained managers and employees representing the most critical enterprises of the company. For this purpose, dozens of special training seminars are held at industrial sites. At the same time a dedicated internal corporate mobile app is set up that allows ordinary employees operating critical company facilities, within a few seconds of seeing a potentially critical situation, to report this to top management and prevent it before it escalates. The most serious problems are promptly raised to the level of top management, and sometimes to the owners, of the company to organize emergency financing to manage these risks. Critical risks and near-emergency situations require an immediate response from the company; experience shows that no more than 5% of all disclosed problems within this model have such a high criticality.

Due to limited financial resources, it is impossible to fully control all the risks of an organization. Also, do not underestimate the possible information overload of top management if you give all employees of the organization the opportunity to send information to top officials about observed risks and problems that concern them. Therefore, the implementation of this model is recommended mainly at critical industrial sites of the company. The model is not intended to solve all the production problems of a critical infrastructure company: there is a traditional management vertical for this. The model is being created in order to prevent serious accidents and loss of life by drawing the attention of top management to serious problems at critical industrial sites when the company's management hierarchy, for various reasons, has not been able to cope with these problems in a timely manner. It is worth noting that not all employees, even at the company's critical industrial sites, are involved in the management of critical equipment. Experience shows that no more than 10% of the employees of these enterprises are involved in the control of critical equipment, which may influence the formation of critical risks for the company as a whole. It is this small group of employees can quickly send information about serious problems directly to the company's top management, bypassing intermediate levels of management.

When an organization has limited resources, this system allows you to see the most vulnerable places in the company's critical infrastructure and wisely distribute limited funds to prevent critical developments.

After implementing this model in a company, there will be a comprehensive improvement in the quality of information about risks and the speed of its transmission from employees and line managers managing critical risks to the top management (and owners) of the company.

This publication is intended for managers of large critical infrastructure companies, consultants in the field of risk management and industrial safety, as well as scientists involved in the issues of risk management and organizational behavior.

ABOUT THE AUTHOR

Dmitry Chernov (Dr.Sc. in Risk Management, ETH Zurich, 2015) is an independent international consultant who trains senior managers, technical managers and communication services staff in the world's largest critical infrastructure companies on how to act and communicate in emergencies. The author also works as a researcher and consultant on the problems of reporting information about risks in large critical infrastructure companies. The first time he realized there was a widespread issue with the concealment of risks in large manufacturing companies was in 2007 during one of his seminars. Since then, he has been actively looking for ways to improve the quality and speed of risk communication in critical infrastructure companies to prevent industrial accidents. Additional information: <http://riskcommunication.info>

INTELLECTUAL RIGHTS

The author asserts that the intellectual rights to this model to improve communication about technical and production risks in large critical infrastructure companies, in order to prevent technological accidents before they occur, belong solely to him. The author requests that his work should not be used in whole or in part in any form, and that the model (or part thereof) should not be reproduced in any organization without written permission. Violation of the author's copyright will inevitably entail criminal, civil and other types of liability.