

Report Summary: Success factors for the implementation of a Zero Accident Vision (ZAV)



Date November 2015

Author(s) prof. Gerard I.J.M. Zwetsloot PhD (TNO), Pete Kines PhD (NRCWE), Rikka Ruotsala Msc (FIOH), Linda Drupsteen PhD (TNO), Robert Bezemer Msc (TNO)

Sponsors Deutsche Gesetzliche Unfall-Versicherungsanstalt e.V. (DGUV), and the seven individual participating research institutes (CIOP, FIOH, HSL, IFA, NRCWE, Prevent, TNO)

Duration of project December 2013 – October 2015

© 2015 TNO



The research project: Aims and approach

The aim of this research project was to attain a better understanding of the factors that contribute to successes with promoting safety and preventing accidents in companies that have adopted a 'Zero Accident Vision' (ZAV). Special focus was on ZAV commitment, safety communication, safety culture and safety learning, as well as on the identification of good practices and major challenges of companies that have implemented ZAV. Understanding the mechanisms that underlie the success of ZAV is of great interest to the German Social Accident Insurance, and for companies that take safety seriously, whether they are already committed to ZAV or not.

Managers and workers in a total of 27 ZAV committed companies in seven EU countries took part in a survey (8,819 respondents), company interviews and national workshops to identify ZAV success factors and 'good practices', as well as challenges in sustaining ZAV.

Results

ZAV Commitment

All 27 companies had remarkably high survey scores for both organisational and individual (personal) ZAV commitment. The organisational ZAV commitments were usually embedded in the companies' strategies, integrated in their business processes and were often part of a broader set of commitments, such as zero harm (health promotion), zero defects or to 'well-being at work'. The relevance of ZAV for health promotion was measured in three German companies. The scores were relatively high, implying that ZAV impacts positively on health promotion. This was confirmed by qualitative data from the other countries. Some of the ZAV companies that paid less attention to health promotion mentioned that broadening ZAV to health promotion or zero harm was a main challenge for the near future.

Safety Communication

The results from the survey support the importance of safety communication for ZAV implementation. All companies had high scores on the two survey dimensions for communication, particularly for organisational safety communication. On the basis of the interviews and workshop data, three main success factors were identified as relevant to communication: specific ZAV or safety promotion programmes, constant and updated communication and functional tools, and effective supervisor communication. Thirteen 'good practices' in safety communication were identified.

Safety Culture

The results from the survey also supported the importance of safety culture for ZAV implementation. Generally the scores on each of the four culture survey dimensions were relatively high. The data allowed for a comparison of 20 of the 72 ZAV survey items with the international database of the Nordic Occupational Safety Climate Questionnaire (NOSACQ-50) - (containing many frontrunners in safety, but it is unknown how many ZAV committed companies are among them). In comparison to over 200 companies/sites in the NOSACQ-50 database, the 27 ZAV committed companies in this study had significantly higher scores for workers on all 11 items regarding management safety priority, empowerment or safety justice, yet did not consistently differentiate on any of the nine workgroup (workers) safety climate items. The ZAV committed companies thus have a 'richer' (more mature) organisational safety climate, where managers/leaders to a greater degree are perceived by workers to prioritise safety on a daily basis – even when working under production pressure. Secondly, managers are perceived to be much better at creating an open atmosphere for communicating about safety, and by empowering workers to take part in discussions and decisions regarding safety issues. Thirdly, they have to a greater degree a 'just' culture in terms of dealing with accidents and incidents, investigating accidents for causes (not guilty persons), and treating accident victims fairly. Interview and workshop results revealed that companies saw safety empowerment and safety justice as two key areas that potentially have a great impact on ZAV. Participative improvement processes should be standard practice, where: leaders ask questions instead of giving answers, they reach out to workers, to discuss and to encourage them to be involved, and to challenge them to think for themselves. Ten 'good practices' in safety culture were identified.

Safety Learning

The results from the survey also support the importance of safety learning for ZAV implementation. The companies and individuals that scored highest on ZAV commitment, also scored (as a group) highest on the two learning dimensions. In the interviews and workshops several success factors were listed for learning, such as: top management support and an 'atmosphere where colleagues can be open about mistakes in order to learn from them', systematic attention for incidents in communication and dialogues, and to focus on those things that go right. These factors are not only related to commitment, but are also strongly related to safety communication and safety culture. Ten 'good practices' for safety learning partly refer to training methods, and partly to other forms of safety learning.

ZAV in practice

Good practices to integrate safety in the way the company is led

Other types of good practices were also mentioned in the interviews and workshops. These practices built on the commitment to ZAV, and helped to integrate safety into the way the company and its production activities were managed and led. In addition, they were stimulated and encouraged through the visible commitment to ZAV. They addressed safety vision/philosophy, system characteristics, recruiting the right people, training people, valuing people, rewards and incentives, and the involvement of business partners and stakeholders.

Success stories

A selection of ten success stories is presented which describe why companies developed their ZAV commitment, what it implied and (if known) its impact on safety performance and safety ambitions. The selection illustrates the variety of motives, strategies and impacts, and may hopefully inspire other organisations to develop their own company success stories.

Networking and benchmarking

The ZAV companies strived for continuous learning and improvement. Most of them were involved in different kinds of networks; in-house and global corporate networks, sector-specific networks, regional, national and/or international level benchmarking, and networking with customers and suppliers. Several companies in Finland, Germany and Netherlands or the Polish Safety Leadership network participated in their respective national Zero Accident networks.

Challenges for ZAV companies

Each of the ZAV companies faced challenges in the upcoming years, such as sustaining and intensifying ZAV commitment, and keeping the approach interesting and relevant. Three main clusters were mentioned: addressing safety strategy, safety management systems and safety culture. The increasing involvement of business partners (e.g. contractors) and broadening of the scope to include health at work were mentioned frequently. Within their own organisations some companies stressed the importance of creating more synergy between organisational functions, e.g., safety and production, OSH, quality, cost, and human resources.

Discussion, conclusions and recommendations

The findings of the PEROSH ZAV Survey, particularly the (very) high scores on ZAV commitment found in all 27 companies strongly support the notion that ZAV is a sound basis for a commitment strategy for safety. It was found that ZAV is closely embedded in the organisations' strategies. Companies that implement ZAV are serious in their strategies and practices to improve safety, and realise that it is an on-going effort. However, ZAV is not the same as 'traditional good accident prevention with goal zero'; it is based on different safety perspectives, illustrated in the table (next page).

In conclusion, ZAV is the basis for inspiring and innovative approaches to improve safety, as well as for the implementation of more traditional safety practices.

ZAV committed companies are not a uniform group; they differ in size, their adopted strategies, primary processes, maturity of safety policies, etc. Nevertheless, the findings demonstrate that they do have many characteristics, good practices and challenges in common. Most ZAV companies shared the perspectives of ZAV as a commitment strategy and ZAV as the basis for a culture of prevention. Some companies perceived ZAV as a trigger for innovative safety practices, others perceived Zero as the only ethically sustainable safety goal, or they associated ZAV with networking and mutual learning with other companies. Networking among ZAV companies, also across sectors, is very useful to allow for learning from the experiences and successes of other organisations.

None of the 27 companies explicitly referred to resilience or to themselves as a high reliability organisation (HRO) as part of their practices or inspiration, but rather as one of their challenges. However, in ZAV companies several characteristics of HRO can be recognised, e.g., preoccupation with failure (alertness, linked to 'individual commitment'), deference to expertise (linked to 'safety empowerment'), and reluctance to simplify. As regards resilience (being prepared to respond to unexpected events), the scores on the safety resilience dimension were relatively low, indicating a clear opportunity for further improvement. The companies did show a tendency that might be understood as an organisational development towards resilient engineering and high reliability organisations.

Table: Zero Accident Vision compared to traditional safety management

Traditional safety management (accident prevention)	Zero Accident Vision
Zero accidents is an (unrealistic) goal	Zero accidents is an ambition – a journey
Preventing accidents	Creating safety
Risk management	Safety leadership and business excellence
Safety is mainly a tactical and operational challenge	Safety is a strategic challenge
Risk assessment and control is the basis for safety improvements	Long-term commitment is the basis for safety improvements
Focus on management systems	Focus on culture, learning and systems
Benchmarking on lagging indicators (like LTIs)	Benchmarking on leading indicators (good practices)
Compliance – ‘We have to’ (external motivation)	Participation - ‘We want to’ (intrinsic motivation)
Safety is a priority	Safety is a value
Safety or OSH as independent silo(s)	Safety is an integrated part of doing business
Safety is perceived as a cost factor	Safety is perceived as an investment
Safety is associated with prescriptions, paper work, and owned only by a few champions	Safety is inspiring, ‘alive’ and ‘owned’ by all members of the organisation
Workers’ behaviour (human error) is part of the problem	Workers are empowered to come up with solutions – they are part of the solution
Safe behaviour is desirable	Safe behaviour is the norm
Incidents are failures	Incidents are opportunities for learning
Safety is designed or prescribed by experts	Safety is co-created by all members of the organisation (having a learning attitude)
Safety management should always be rational	Safety management is rational but also founded on ethics
Safety culture is important	A safety and ‘just’ culture is important
Safety and health are in practice two distinct worlds	Zero accidents and zero harm are ethically and practically closely interconnected
Safety is only relevant internally (and for the authorities)	Safety is also relevant for business partners and external stakeholders
Safety improvement is triggered by internal processes (Plan, Do, Check, Act)	Safety improvement is triggered also by learning from the experiences of others
Safety improvement is triggered by best practices in the sector	Safety improvement is triggered by good practices from other (ZAV) companies and sectors

Roadmaps for ZAV implementation

The findings of the research project are also used to develop guidelines for ZAV implementation. These guidelines are focused on challenges and inspiring safety strategies with an overview of suggested good practices. These roadmaps may be useful for the German Social Accident Insurance, as well as for individual companies.

Limitations

Some limitations of this research were the lack of a control group (companies without ZAV) and data of developments through time, the inability to relate good practices with reliable data on e.g., accident frequencies, and the cross-cultural differences leading to highly subjective quantitative benchmarking. Therefore, the conclusions are not definitive. Nevertheless, the results can give valuable input for companies developing ZAV strategies, and for stimulating existing programmes.

Relevance for prevention in the area of work and health

A commitment to zero accidents is demonstrated to be relevant for the prevention and promotion in the area of work and health. The results of this research may support and encourage ZAV committed companies to further broaden the scope of their commitments, e.g. involving their business partners and integrating safety and health commitments. SMEs might benefit from national programmes to promote a prevention culture. The relevance of the research project for DGUV lies in the resulting perspectives for supporting and encouraging companies to develop ZAV-based commitment strategies and promoting a prevention culture.

Recommendations

The main recommendation to DGUV is to use the findings of this research with the further development and implementation of the national campaign to foster a prevention culture. There are two important implications:

- ‘Vision zero’ is not a natural result of on-going accident prevention effort; its implementation is driven by commitment. It is therefore strongly recommended to focus part of the campaign at strengthening organisational and senior management commitment to ZAV, thereby also explaining its innovative character and the differences with traditional accident prevention.
- ZAV-committed companies see the close connections to prevention in health and wellbeing, ‘zero harm’. It is natural for companies to start their ‘zero commitment’ with ZAV, whereby zero harm is likely to follow. As a consequence, an initial focus on promoting ZAV is likely to be an effective way of promoting ‘vision zero’ more broadly.

Recommendations for further research and for companies that want to implement ZAV are also given.