Occupational Health and Safety by Design:
Integrating Safety, Health and Trust into Digital Tools

User-centered solutions for secure and trustworthy digital tools

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Healthy Workplaces

Boehringer Ingelheim in brief

- Family-owned pharmaceutical company
- Founded 1885 in Ingelheim, Germany
- Focus on Human Pharma and Animal Health
- About 54,500 employees worldwide
- R&D expenses of 6.2 billion EUR
- 26 R&D sites worldwide for Human Pharma and Animal Health
- Net sales of 26.8 billion EUR

Boehringer Ingelheim Center

Our headquarters in Ingelheim

Status: 31/12/2024

Agenda and topic overview

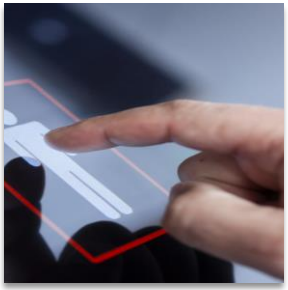
- Why Safety and Health (OSH) Must Lead Digitalization
- Human-centered platform decisions and compliant design
- Psychosocial indicators, iterative monitoring in practice and governance according to current standards
- Closing Round

Why Safety and Health (OSH) Must Lead Digitalization

Let´s think about our challenges

Why do we digitalize our practices and activities?

- **Efficiency and Speed** – (reduces manual errors, accelerates workflows).
- **Data-Driven Decisions** – (real-time analytics, predictive analytics).
- **Transparency and Compliance** – (improve traceability or regulatory adherence).
- **Cost Optimization** – (Cuts operational costs or resource optimization).
- **Scalability and Flexibility** – (Supports global operations, quick adptation to market changes).



Which aspects of OSH by design are the most challenging in our organizations?

- **Early involvement in planning** - (after key decisions).
- **Cross-functional coordination** (lack of alignment of departments with safety requirements).
- **Predicting new hazards** – (Limited foresight for unfamiliar processes or technologies).
- **Cultural resistance** – (Moving from reactive compliance to proactive design).
- **Balancing cost and safety** – (Safety measures compete with budget and timelines).

Digitalization without OSH leadership risks creating unsafe, inequitable workplaces.

When OSH leads, technology becomes a tool for healthier, safer, and more productive work, not just faster or cheaper operations.

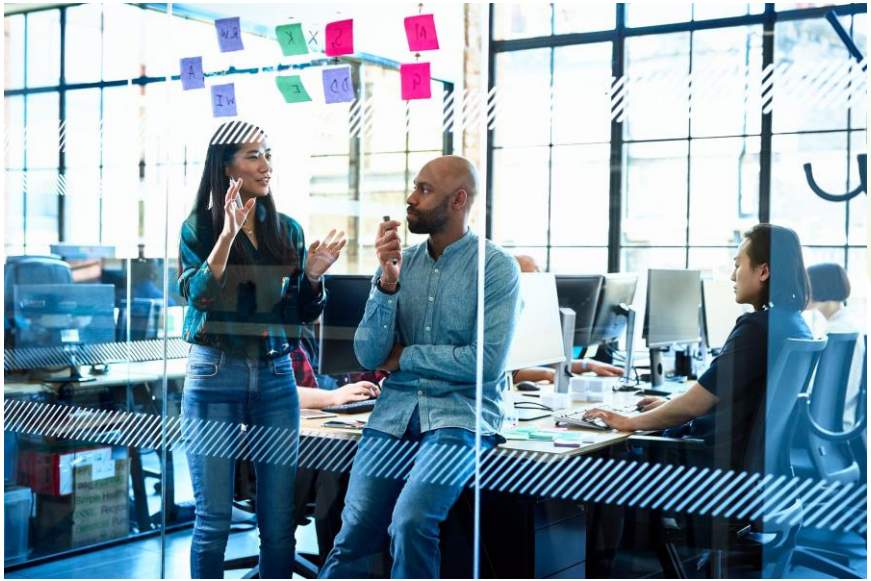
Human-centered platform decisions and compliant design

Guiding principles: User-centric, participatory and transparent

User-centered design process
A user-centered design process significantly increases the acceptance and security of digital systems.

User participation
User participation strengthens trust and promotes the development of effective solutions.

Transparent communication
Transparent communication builds trust and improves collaboration in the design process.

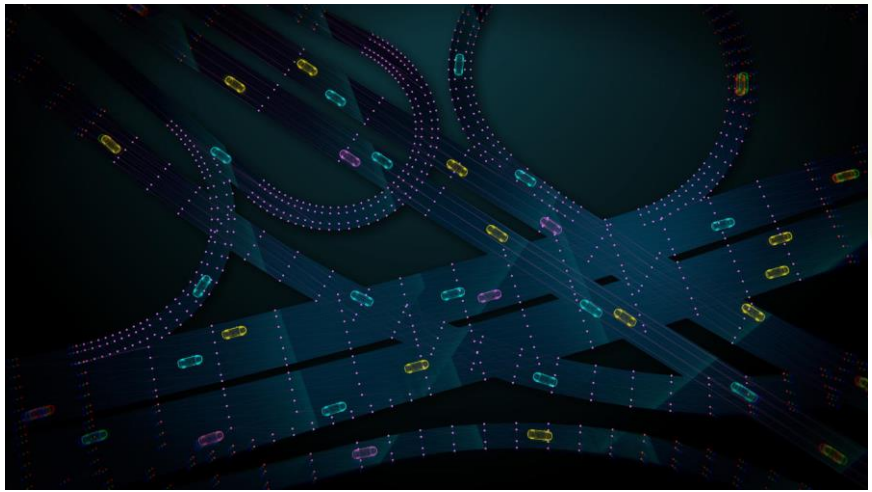


Practical example: from roadmap to development of our OHS tech strategy

Comprehensible presentation
Roadmaps and visualizations make complex health and safety goals easier for users to understand. → co creation and cross collaboration

Promoting user orientation
The clear illustration supports the orientation of the users and improves the achievement of goals. → based on past experience improving and prioritizing user needs and expectations.

Reduce complexity
Visualization helps to present complex processes and relationships in a clear and comprehensible way. → visualizing data flows to simplify our processes.



Connection to ISO 9241-210: User Participation, Iteration, Controllability

User-centered design

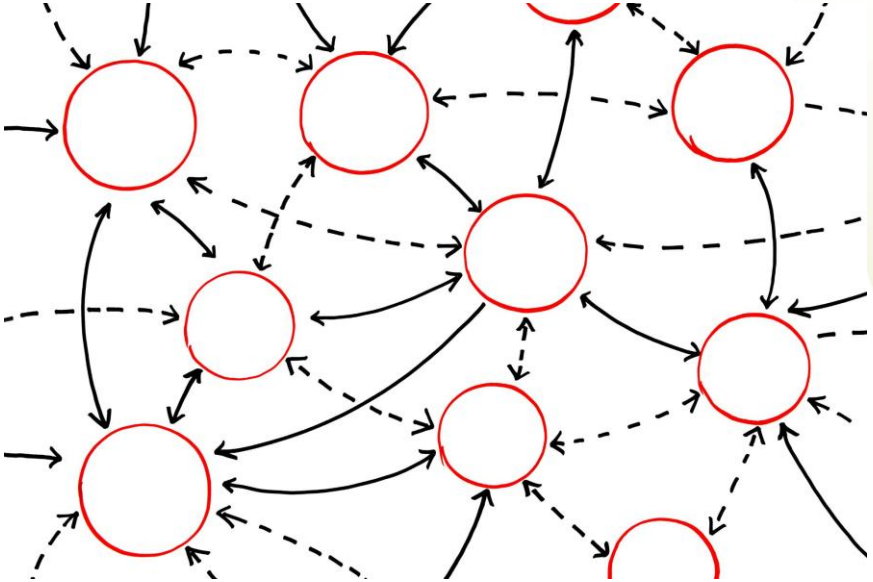
ISO 9241-210 emphasizes the importance of user participation in the design of user-friendly digital products. We have a systematic **role based approach** engaging users and developers to explore different perspectives (Personas).

Iterative processes

Repeated development cycles allow for continuous improvements and adjustments based on user feedback → minimum **3 levels of iterations** take place (development, pilot, roll out)

Controllability by users

Users should have control over digital tools to ensure safe and effective use → **User feedback** is built into our change management, with users **involved in decisions** and a **holistic end-to-end approach covering both online and offline impacts**.



In practice psychosocial indicators, iterative monitoring in practice and governance according to current standards

Global Pulse Check: Anonymized key figures and insights

Anonymized data

The Global Pulse Check collects sensitive data **anonymously** to protect privacy and **ensure honest results.**

Psychosocial stress

The key figures show stress trends and help **to identify psychosocial risks in the workplace at an early stage.**

Improvement of occupational safety

Data-driven insights drive targeted actions to optimize safety and well-being in the work environment.

Transparency of psychosocial aspects and participation

Engagement of our workers councils

Ensure proper alignment up front with our employee´s representatives.

Promote open communication

Transparent discussions about psychosocial risks supports a psychologically safe workplace and foster stronger cooperation within the company. → survey and workshop concept

Use participatory approaches

Employee participation in OSH initiatives promotes acceptance and **improves the working environment in the long term.**

Governance structures that build trust

Clear governance structures
Responsible governance defines clear rules and processes for digital OSH tools.

Compliance and ethical standards
Compliance with **legal and ethical regulations** strengthens the credibility of OSH tools→ accessibility and inclusion e.g.in visuals or colors

Trust and acceptance
Transparency and accountability drive long-term trust and acceptance among users.

Closing Round

Conclusion: OSH by Design as the key to secure and trustworthy digitization

Combining safety and health
OSH by Design integrates safety and health directly into digital work tools for sustainable success.

User orientation and ethics
Consistent user orientation and ethical principles are central to trustworthy digital solutions.

Governance for future readiness
Governance mechanisms ensure sustainable and responsible digitization in the working environment.

As a campaign partner, we champion open dialogue on OHS risks and fresh perspectives.

By collaborating across the EU-OSHA network, with researchers, the EU-OSHA Council, and organizations across different industry sectors, we accelerate progress, share best practices, and strengthen our commitment to safer, healthier workplaces for all.

Examples

Example –HR Direct – service desk

One day at HR direct (2 min)

Example – Corona pandemic 30.000 people working from home

Example – Remote and hybrid work 5 years after the pandemic

The Group Management Board
and the Group Works Council
of the Boehringer Ingelheim Group Germany

have entered into the following
Group Works Agreement
"Remote Work"

VIII. Occupational safety

The workplace used by employees outside the company premises must be suitable for remote work.

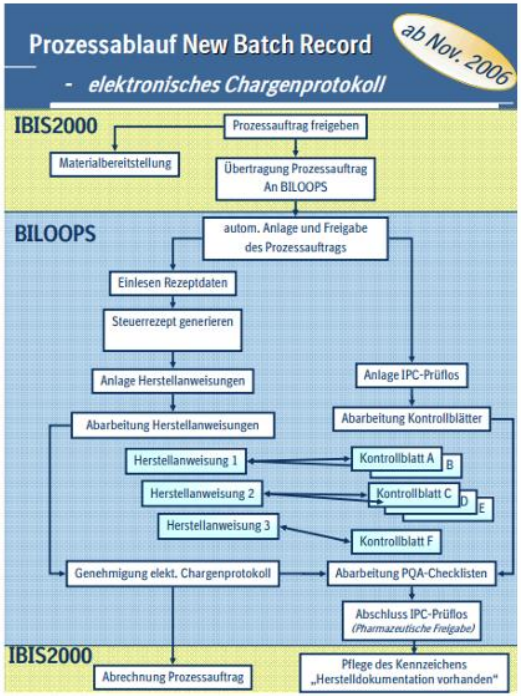
The legal provisions of occupational health and safety applicable in the context of remote work must be observed and complied with. Managers must pay particular attention to the mental stress that may arise in the context of remote work.

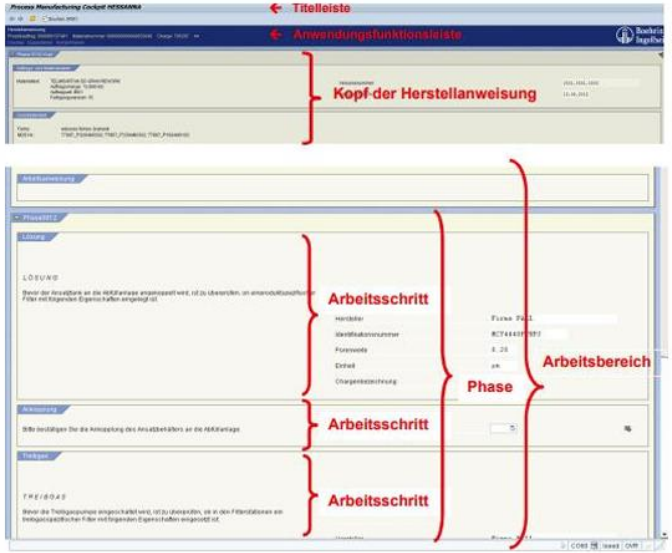
In particular, employees must comply with the relevant provisions and regulations on ergonomic workplace design and must pay attention themselves to low-stress screen work, appropriate changes of activity and breaks from work.

If, during remote work, employees have any doubts as to whether a workplace meets the requirements of occupational health and safety/the in-house medical service, or identify previously unrecognized sources of danger or hazards, they must immediately inform their manager and HR. Remote work must not be continued until the sources of danger or hazards have been removed.

Example – Documentation management

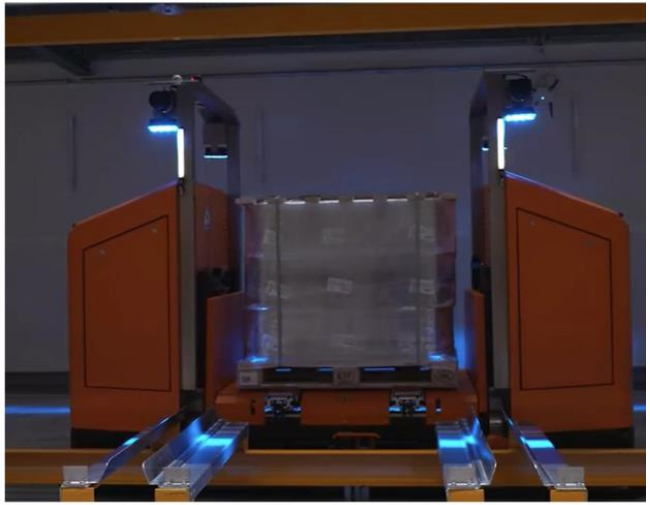
1. Implementing in our pharmaceutical operations sites in Ingelheim and Biberach the paper-on-glass batch record documentation based on SAP



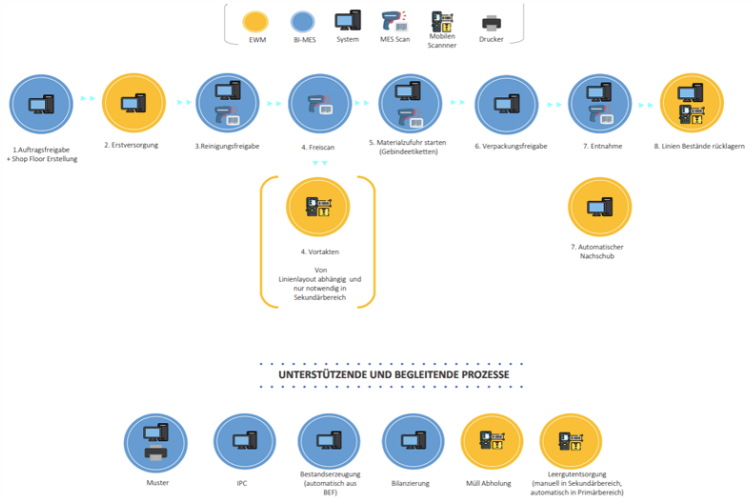


Example – LogiPack Center

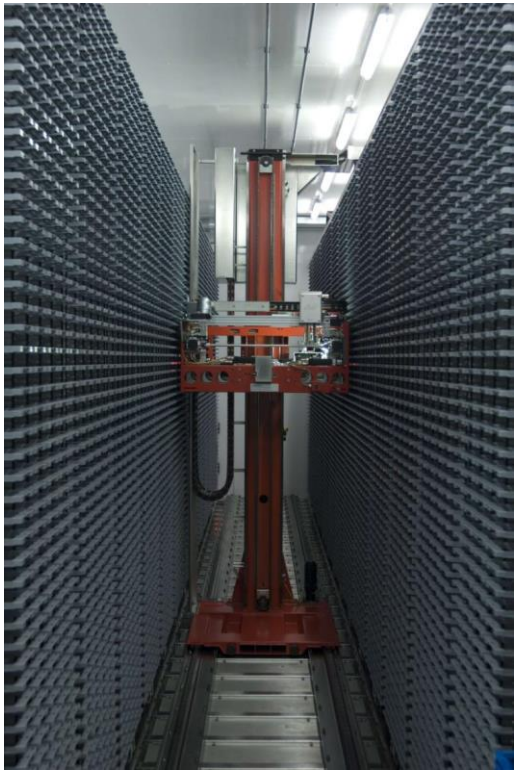
2. Implementing in our LogiPack Center (LPC) in Ingelheim for the finished good packaging process of our pharmaceutical products a 100% SAP-driven material flow executed by automatically guided driverless transportation systems



As a consequence our shop-floor employees are not only managing all material flow processes with SAP, but are additionally taking care of the inventory accuracy.



Example – Automated DNA banking



1. Full Automated robotic system
2. Reliable, high-capacity storage (5 Mio aliquots)
3. Temperature: -20 °C
4. EHS relevance:

Example –Pack Machine

3. In 2019 our Solida packaging factory developed the „Future Pack Machine“, a packaging line for small batches, e.g. oncological products, since this technology had not been offered by packaging line suppliers.

Q&A