

Prioritizing Shop Floor Usability in PHRED's Design

Introduction

In today's manufacturing landscape, the ability to quickly identify, analyze, and resolve problems is critical for maintaining efficiency, quality, and profitability. Software solutions designed to facilitate this process must be accessible and user-friendly for all personnel, particularly those on the shop floor. PHRED's design philosophy prioritizes shop floor usability, ensuring that the software is a practical and effective tool for problem-solving in diverse manufacturing environments. This white paper will explore the key design elements of PHRED that make it uniquely suited for shop floor use.

Historical Emphasis on Shop Floor Needs

PHRED's commitment to shop floor usability is deeply rooted in its history. From 1991 to 2004, PHRED was employed by leading corporations to design reasoning and diagnosis software around catastrophic failure and problem-solving. Notably, from 1997 to 2001, PHRED collaborated with Toyota Motor Manufacturing to design their Practical Problem Solving system and create shop floor prototypes for testing in production cells. This foundational experience instilled a priority for shop floor usability that has continued to influence the development of the software.

Key Design Elements for Shop Floor Usability

PHRED incorporates several key design elements that contribute to its ease of use on the shop floor:

- **Ease of Use for All:** PHRED is designed to be simple and intuitive, ensuring that anyone in the organization can use it, not just experts or those with specialized training. This approach fosters a broader culture of problem solving, where more employees can contribute to process improvements. The software includes an online coach and help at every stage to assist users.
- **Configurable Single-Page Forms:** The system uses configurable single-page forms tailored to different needs, such as Complaints, Non-Conformances, Supplier, and Safety. These forms simplify data entry, making it quick and straightforward for shop floor personnel to record issues and relevant information. The forms can be configured to match the specific needs of different departments.
- **Guided Problem-Solving Processes:** PHRED guides users through structured problem-solving processes, such as the 5 Why. This step-by-step guidance ensures that users, regardless of their experience, can effectively investigate problems and find root cause. PHRED breaks down complex processes into simple steps that anyone can follow.
- **Focus on Questions, Not People:** The software is designed to focus on questions and data rather than on individuals or blame. This creates a neutral environment where people can work together to solve problems without fear of retribution or finger-pointing. The system uses questions to elicit and share reasoning.
- **Centralized, Accessible Database:** PHRED features a searchable database of past problems, enabling users to quickly see what was done previously, who was involved, and what lessons were learned. This database transforms problem-solving knowledge from

being individual to being collective and institutional. Users can search by various filters including keyword, location, customer, supplier, part number, and problem owner.

- **Real-Time Information:** The system provides real-time information on issues and actions, allowing users to see trends, compare data, and understand the current state of problem solving activities. This ensures that shop floor teams can make informed decisions and take prompt action.
- **Automatic Reports and Charts:** PHRED can generate automatic reports and charts, eliminating the need for manual data assimilation and making it easier to identify patterns and trends. These visualizations help shop floor personnel to quickly assess the scope of problems and determine appropriate next steps.
- **Automated Notifications:** The system includes automatic email reminders for due dates and overdue actions, ensuring that problems and tasks are not overlooked. This feature helps to keep teams on track and maintain momentum in their problem-solving efforts.
- **Configurability by the Quality Department:** PHRED is designed to be configurable by the quality department without requiring assistance from IT or PHRED technicians. This feature empowers the quality team to tailor the system to their specific needs, making it more responsive to the dynamic environment of the shop floor.
- **Multi-lingual support:** PHRED is multi-lingual to accommodate global operations. This is particularly beneficial for international companies where personnel may speak different languages.
- **Supplier and Customer Portals:** PHRED has portals that allow suppliers and customers to log in, enter their own data and track issues, which streamlines communication and ensures that all parties are on the same page.
- **Integration with other systems:** PHRED can interface with systems like SAP or Salesforce, reducing data entry redundancy.

Benefits of Prioritizing Shop Floor Usability

By focusing on these design elements, PHRED delivers significant benefits for shop floor personnel:

- **Empowered Problem Solvers:** The system is easy to use, so more people can contribute to solving problems and creating a culture of continuous improvement.
- **Faster Problem Resolution:** PHRED's structured approach helps teams to quickly identify root causes and implement effective solutions.
- **Reduced Downtime:** By enabling quick problem resolution and preventing recurring issues, PHRED helps to minimize costly downtime.
- **Improved Data Collection and Analysis:** PHRED's forms, database, and reports makes it easier to collect and analyze data to inform decision-making.
- **Enhanced Collaboration:** The system facilitates communication and knowledge-sharing across different teams and locations.
- **Reduced Costs:** By preventing the recurrence of problems, and identifying areas of waste, PHRED helps companies save resources, time, and money.

Conclusion

PHRED's design prioritizes shop floor usability, making it an accessible, practical, and powerful tool for problem-solving in manufacturing environments. Its historical roots in shop floor problem-solving, combined with its focus on ease of use, structured processes, and collaborative tools, enable organizations to enhance their problem-solving capabilities, reduce costs, and drive continuous improvement. By empowering shop floor personnel to actively participate in problem-solving, PHRED helps to create a culture of learning, innovation, and excellence.