



Figure 1: User-centered and flexible line management with zenon.

MULTIPLYING SUCCESS IN FOOD & BEVERAGE

The Ease of Rolling Out a Line Management System using zenon

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INTERNATIONAL CORPORATIONS are often not only characterized by their size, but by their complexity. Spread over multiple culturally and economically diverse countries, with production plants which have grown heterogeneously over time, food & beverage groups often face unequal levels of performance and unequal degrees of automation. To achieve global harmonization, corporate standards are rolled out step by step. Such standards will target all plant sectors, processes and resources, starting with obligatory quality prerequisites and progressing to the optimization of production costs and efficiency improvements. Defining milestones and KPIs for these developments helps corporate management to monitor and drive the progress of standardization and continuous improvement.

The ongoing transformation of such international organizations is usually strongly connected to the automation and IT infrastructure. When cohesive concepts have to be successfully implemented across many different food & beverage production plants, a key success factor will be the chosen technology and how profitably it is used.

Here, we look at a line management system from the perspective of a corporate rollout. A filling or packaging line is usually subject to very high performance expectations and is, therefore, a good example of how the technology embedded in the zenon Product Family pays off. Nevertheless, zenon's product philosophy and universality also enables a similar approach within other plant sectors as part of a corporate rollout.

PILOT PHASE: RICH IN EXPERIENCE

What to roll out? This question is the starting point for any rollout project team. Corporate standards, previous local experiences, internal competencies in automation and IT, and critical analyses of industrial standards will bring clarity here. User requirements specifications set out functional wishes in an organized way. But simply distributing such a document throughout the organization will not deliver the benefits of a corporate rollout. More likely, existing differences would be further deepened. Instead, the aim should be to establish real technological concepts which deliver tangible benefits. This is why a pilot phase is essential.

What is the secret of a successful pilot phase? For a professional project team it is more than playing with a nice local project example. The team should consider how exactly the rollout will work in plants with different automation landscapes and what hidden costs and risks need to be mitigated. Let's see how this works when using zenon.

is its connection to any relevant production equipment or measuring systems – a strength of zenon. Old or new machines can be integrated independently of automation technology or supplier – so process parameters, status and context information, production and consumption counters are brought easily into the system. The next steps of archiving, displaying, trending or analyzing from different perspectives are supported by configurable out-of-the-box components in the zenon development environment. In comparison to other approaches where software code must be programmed, this results in an extremely fast system integration with plenty of possibilities, based on reliable software and sophisticated technologies.

It often surprises newcomers to zenon just how accessible the system integration is to a wide range of people; not just for advanced programmers. One direct effect of this is that the costs of a pilot project will remain reasonable. The freedom to choose who will integrate – existing or new project partners, internal personnel

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In terms of the functionalities of line management using zenon, the system delivers complete and reliable information flows for data acquisition, archiving, processing and analytics. The end user – whether an operator, line supervisor or manager – is supported by a wide range of tools to contribute decisively to the plant performance: process supervision, alarm and event management, parameter trend curves, key performance indicators displayed in dashboards, reports at line or machine level, changeover control integrated within production planning, and more – see *Figure 1*. zenon provides real-time information to support responsive decision-making and historical analysis for a deeper understanding of improvement potential.

What does this mean for the corporate organization? We at COPA-DATA find that software technology brings more ergonomics for production teams and essential help to continuously improve process quality, production and consumption effectiveness.

A pilot project has to answer many questions about integration and cost. The base of a line management system

or members of the corporate project team – encourages creativity and transforms the pilot phase into a very rich experience. The modular development of the application, the system openness and the convenient horizontal and vertical expandability all work to help zenon answer the challenge of the food & beverage industry's particular dynamism.

If very particular or innovative functionalities have to be implemented, zenon is open and supports software programming in IEC 61131-3 PLC, VBA or modern VSTA languages.

There are many other innovative technologies and concepts enabled by the zenon Product Family capable of raising the technical enthusiasm of the project team and the value of the entire line management system: process simulation, interface usability, mobile solutions, Multi-Touch interface, Worldview, 3D-process visualization, automated project documentation, and the list goes on ...

ROLLOUT: ADAPTABLE, COST-EFFECTIVE AND COMPLIANT

The benefits zenon delivers during a corporate rollout go beyond delivering ergonomics to every member of each international production team in a standardized way. From an engineering point of view, it is desirable to use as much as possible from the pilot to decrease implementation costs and integration time of every local project. zenon projects can be integrated with any existing PLC or third-party software thanks to its hardware and platform independence. This ensures that the new line management system can be easily adapted, avoiding unexpected or expensive replacement costs.

zenon enables universal utilization within existing or new infrastructure thanks to over 300 native communication protocols and interfaces for vertical integration. Technologies such as XML import/export, object orientation with global, central or local configuration, template-based interfaces and numerous other mechanisms guarantee high efficiency in the zenon development environment. zenon's network technology supports the full reuse of a server project so a line management system can be extended with a client-server, web-server or mobile apps architecture over the corporate intranet or Internet.

zenon also spectacularly increases the speed of implementation through its wizard-based "Automatic Engineering". Applications can be generated first by using standardized components defined during the pilot phase, such as machine tags, calculation libraries, graphical symbols, screen templates, terminology within language translation tables, measuring units conversions, color codes, reporting templates and the like. Furthermore, user options

deliver flexibility in local implementations. For instance, by determining the type of packaging machines, the PLC interface, the functionalities, etc.

Weihenstephan Standards and OMAC PackML are two industrial standards supported by zenon, which help efficient integration and the reuse of entire information flows in line management applications.

All these highly sophisticated technologies bring ergonomics in engineering to the ever-growing family of system integrators who deploy zenon. What does this mean for the rollout project team? You are no longer dependent on one company which owns all the "engineering secrets". Risk stemming from the availability and cost of particular system integrators can be avoided. You gain the freedom to choose from local, regional or global partners at any time.

A line management system today has more than a local relevance for any food & beverage production company. zenon enables local systems to be extended at a corporate level.

Acquired production data can be made centrally available via the IT infrastructure, including the company network, database systems, virtualization and even via the zenon Cloud solution. Highly available stored data opens the way for comprehensive reporting across entire international operations, based on zenon Analyzer. And zenon Everywhere Server supplies data for mobile apps in real-time without any geographic limitation while delivering state-of-the-art communication security.

In order to underwrite corporate change management, the multi-user engineering technology of zenon offers a central SQL-based storage for all engineering resources.

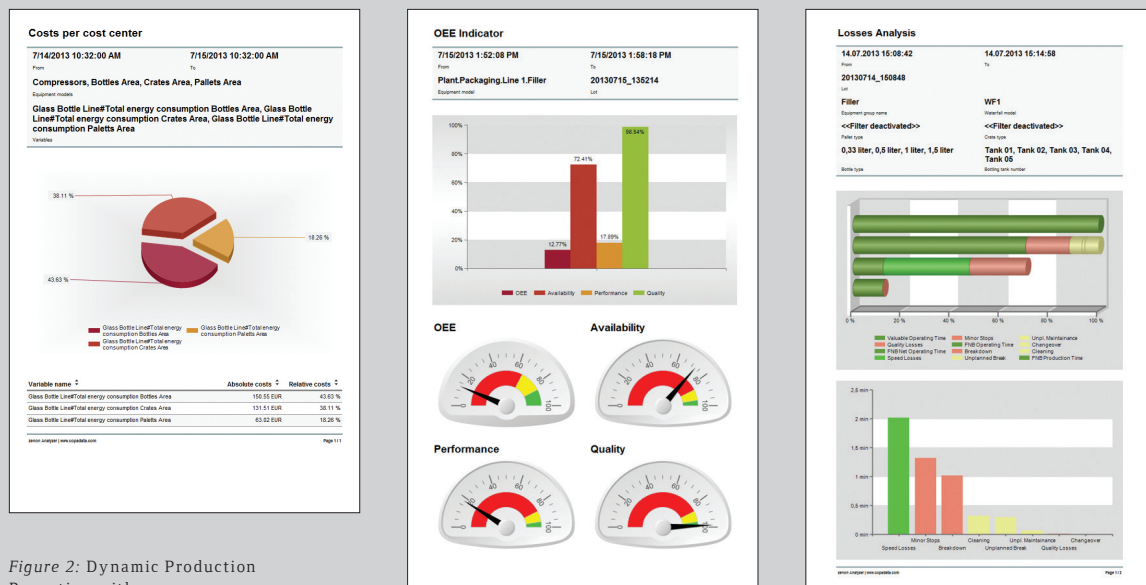


Figure 2: Dynamic Production Reporting with zenon.

With zenon, the rollout of a line management system addresses both local peculiarities and corporate conformity. Production teams and central specialists are equally well-served with information; making their optimization efforts easier. Real-time operation or historical analytics are accessible not only plant-wide, but throughout all corporate operations.

FURTHER IMPROVEMENT - A CONTINUOUS PROCESS

The food & beverage industry is a field where line management has to change and adapt regularly. Continuous improvement processes bring new ideas. These could include new ways of data analytics, correlations of data or innovations for the user interface. Newly installed machines or energy counters, the involvement of additional people, or demands for an ERP-to-HMI flow, will typically require adaption to the line management system. Therefore, even a successfully deployed system will likely be subject to extensions or modifications over time.

The expandability of a zenon line management system makes such changes possible, freeing the creativity of production managers. Plus, zenon's ease of engineering provides flexibility over who will implement any changes: your internal automation specialists, your favorite local system integrator or your favorite regional engineering partner?

zenon's licensing system follows the same "freedom of choice" principle for updates and extensions. The initial investment is protected by backward compatibility in the development and runtime system for heterogeneous project networking.

The consequences of keeping engineering costs low despite high flexibility are evident and are a prerequisite for a reduced total cost of ownership (TCO).

THE FREEDOM TO DRIVE GREAT PERFORMANCE

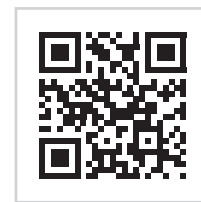
In conclusion, the zenon Product Family represents a development framework for line management systems and many other applications combining maximum openness and flexibility with high-performance automation and IT technologies embedded within reliable ready-made components.

COPA-DATA strives to eliminate unnecessary creativity constraints and dependencies, making every zenon system integrator, especially those active within the COPA-DATA Partner Community, a great choice as a professional engineering partner for corporate rollout projects in the food & beverage industry.

Innovative software technology and engineering is enabling international groups to gain freedom and optimization in all the steps of their strategic projects and with all their related costs.

TECHNOLOGIES SUPPORTING YOUR ROLLOUT PROJECT

- Entire zenon Product Family
- zenon development environment with efficient engineering
- Hardware independence through more than 300 communication protocols
- Native multi-language support
- Flexible and secure network, client-server and redundancy
- Automatic engineering
- Vertical integration, e.g. with Process Gateway
- Microsoft Dynamics interfaces
- Integration of Microsoft Azure Cloud
- Dynamic Production Reporting
- Message Control
- Everywhere Server for mobile apps



<http://kaywa.me/IOJJx>

Line Management with zenon
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