measurex

M X O P E N
NETWORKED
SOLUTIONS
FOR RESULTS TODAY

THE
COMMITMENT
TO INTEGRATED
SYSTEMS
CONTINUES

NETWORKED SOLUTIONS • RESULTS TODAY •
MX OPEN

M XOpen—

Networked solutions based on

industry standards.

MXOpen™ established its leadership as the first control system to use open, industry standards. The MXOpen commitment to open, integrated systems continues. Powerful, new workstations and industry-standard communications provide compatibility with existing systems while ensuring modular expandability for the future.

The Commitment Continues

MXOpen continues Measurex's commitment to your product quality by:

- Advancing the industry-leading DCS architecture.
- Improving operator access.
- Enhancing CD controls and actuators.
- Adding new web inspection capabilities.

- Continuing measurement superiority.

The integration of these technologies into an open-network solution helps papermakers meet today's and tomorrow's challenges in the competitive marketplace.

Continuous Improvement

The Measurex MXOpen family helps papermakers "institutionalize" a strategy of continuous improvement. Using MXOpen's broad range of products, mill personnel can identify opportunities and make process improvement a part of their daily activities.

The system's network architecture smoothly integrates control and presents meaningful information which empowers mill personnel to make better products more efficiently.
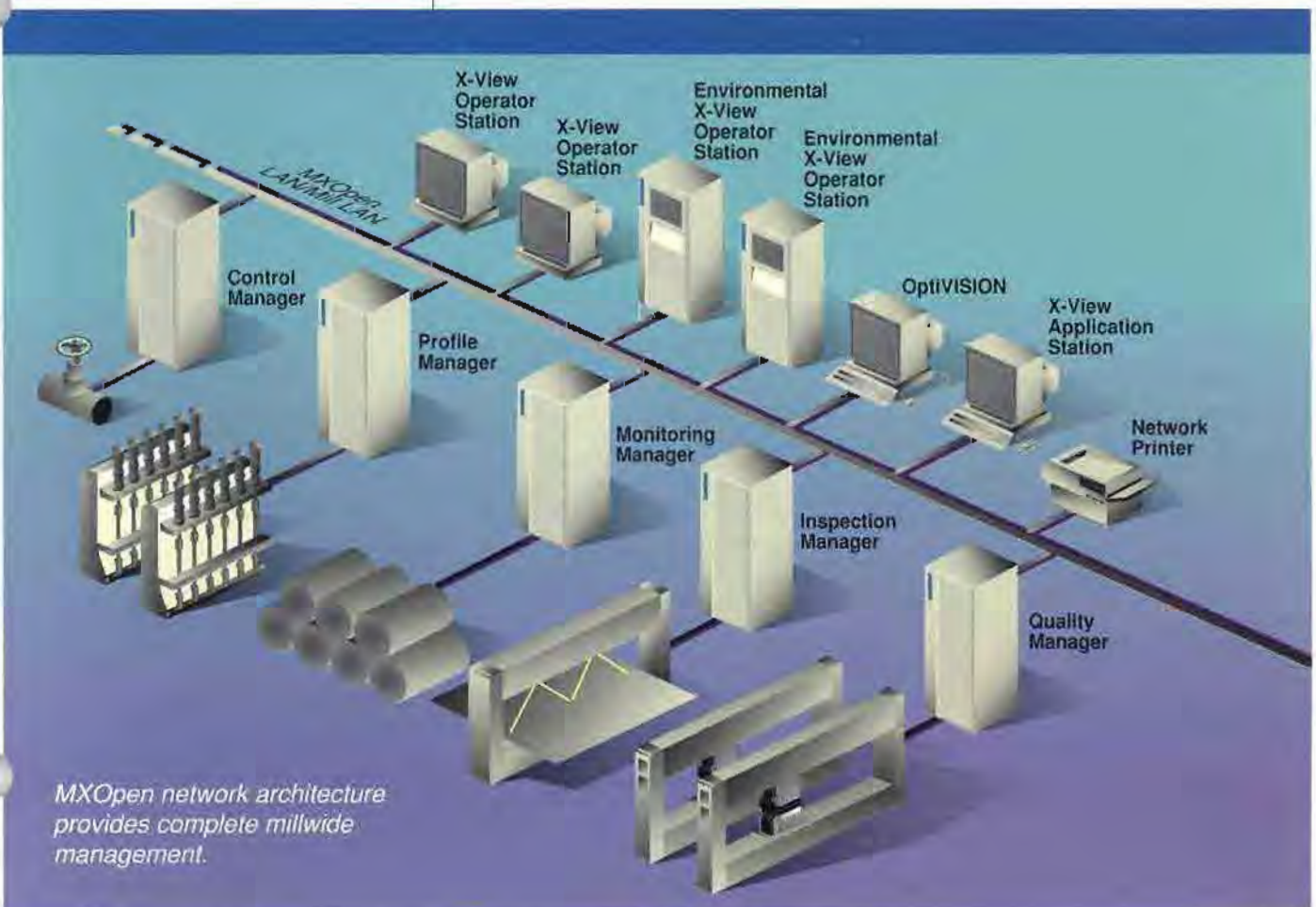

Desktop X-View
Operator Station

Networked Solutions For Results Today

The complete MXOpen family of networked solutions includes:

- Millwide Visibility
- Distributed Control (DCS)
- Quality Measurement and Control
- Profile Actuation
- Intelligent Sensors and Scanners
- Continuous Web Inspection
- Enterprise Management

MXOpen steps beyond conventional systems, challenging the control industry with the next advancement in integrated control and information. MXOpen's networked solutions, based on proven technology, are ready to deliver immediate, tangible results, today.

MXOpen network architecture provides complete millwide management.

Millwide Visibility —

Workstations merge time-

critical control and informa-

tion throughout the mill.

MXOpen provides multiple open windows to your mill's total operations. By applying the latest developments in workstation technology, Measurex is able to provide simultaneous access to real-time control and information through consoles anywhere on the millwide network. This continuous visibility provides you with the support you need to make the kind of decisions required in today's competitive environment.

X-View Operator Stations — An Open Window

The MXOpen X-View Operator Station™ takes the next step in process management. By combining access to real-time control and millwide information, the X-View Operator Station advances beyond a single window on the process to an open window on the total process.

- An open window to all MXOpen and standards-compliant systems advances decision making on the production floor.
- Time critical data is always visible.
- Access to multiple systems and applications without a myriad of overlapping windows.
- Intuitive navigation through all levels of information and control.

Flexible and Easy To Use

- On-screen, touch keypads eliminate complex keyboards and special function keys.
- Customizable screens meet individual needs and preferences.
- Desktop versions for control rooms and environmental ver-

With the MXOpen X-View Operator Station, information is accessed easily through touch technology.

sions to withstand harsh, mill-floor conditions.

Wherever you may be in the mill, X-View Operator Stations give you an open window on the total process.

X-View Application Stations — Information Integration

The MXOpen X-View Application Station™ adds compute power to support information processing for multiple users and multiple applications.

Using X-View applications, personnel throughout the mill can access and analyze real-time process and quality information.

- ProcessView™ allows management and supervisory personnel to view multiple MXOpen system displays, in real time, from any system on the network.

- InfoView™ relational database contains current and historical data for analyzing product quality characteristics.

Interoperability With Alliance Partners

Measurex has established strategic alliances to ensure seamless integration and interoperability between MXOpen and products from other major suppliers of control and information systems.

The MXOpen alliances protect your investment in existing DCS, drives, information systems and training, while ensuring you have access to the latest process improvement technology from Measurex. Whether the system came from Measurex or another vendor, the MXOpen alliance capabilities provide open visibility to all process areas in your mill.

X-View Application Station provides complete integration of millwide control, quality and management data.

InfoView Process Analysis Graphics reveal total reel quality from start to finish.

Distributed Control —

Industry's most reliable com-

pute power provides

advanced control results.

MXOpen's architectural advances are designed to make your entire DCS project run smoothly and efficiently. The high level of integrated CPU power can meet any control challenge — with integration that ensures simplicity. Through each project stage, from scope definition through system startup, MXOpen saves time and money while providing maximum expandability to meet your future process control needs.

Reliable Distributed Control

With the MXOpen Control Manager™ distributed controls, reliability is built-in.

- Papermaking processes run at optimal efficiency.
- Advanced CPU power and customizable, preconfigured control solutions for all process areas throughout the mill.

Continuous uptime for millwide control is achieved through a combination of:

- Control Processor redundancy.
- Self-diagnosing, intelligent UNITEC I/Os.
- Redundant communications.
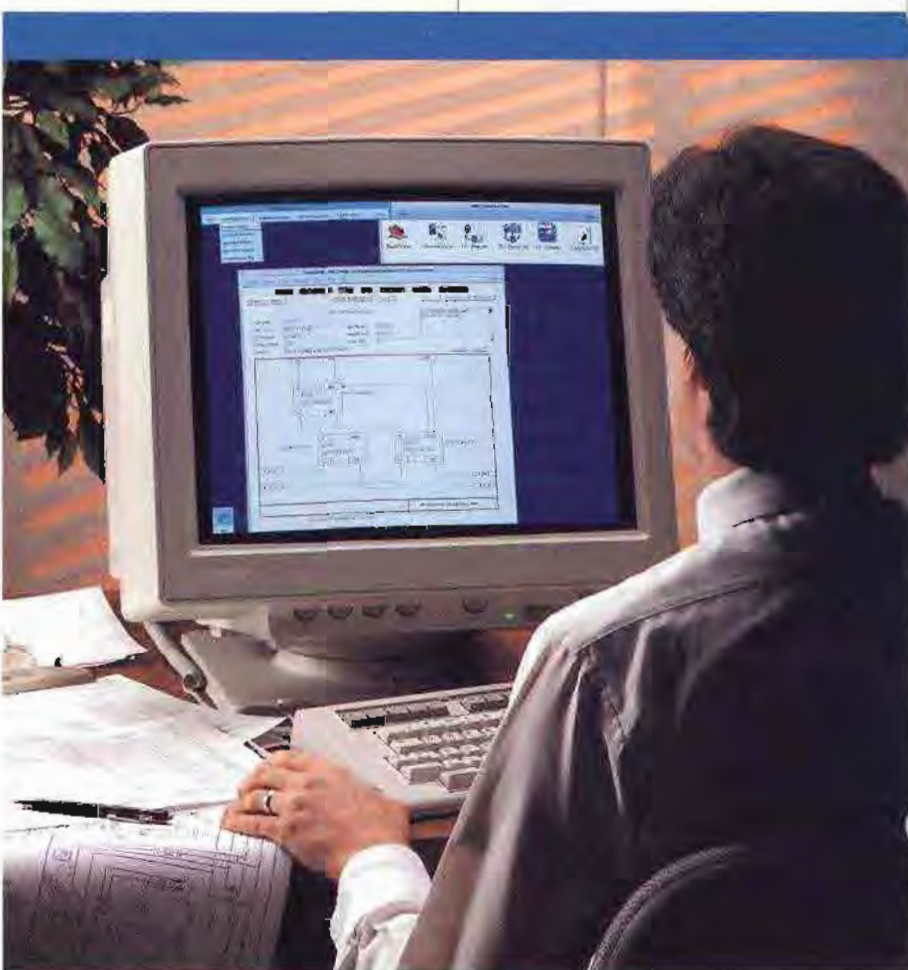- Integrated UniLogic PLCs.

BuildView Configuration Workbench

MXOpen's powerful distributed control is easy to configure through BuildView™.

- Supports the entire instrumentation project from design phase through implementation and on-going maintenance.
- Significantly reduces installation costs and startup time by managing the DCS design — even before the system hardware is in place.

Intelligent, standalone UNITEC controllers allow easy expansion. Resources are automatically increased as the system expands.

BuildView configuration workbench makes DCS configuration fast and easy.

- Provides common, graphical environment for all configuration and data entry.
- Pull-down selection menus, "fill-in-the blank" forms, function block templates and on-line help — all based on standard instrumentation concepts.
- Library of preconfigured control strategies allows simple to sophisticated DCS application solutions.

Automatic Documentation

Throughout the project, BuildView automatically documents changes to the control system. As your control system expands, BuildView supports multiple projects simultaneously to accommodate large, multi-system installations, bringing process improvement to every aspect of mill operations.

Quality Measurement and Control —

Proven MD and CD control

strategies ensure optimal

papermaking results.

MXOpen's Quality Manager™ combines advanced Precision-PLUS™ measurement with sophisticated, optimizing control. Quality Manager helps you control the entire papermaking process, adapting to the ever-changing needs of your customers.

Powerful, Optimizing Control

MxOpen's Quality Manager provides unprecedented distributed computing power and advanced control strategies for tight supervisory optimization of the papermachine — from stock preparation to the reel.

- Provides extremely fast control execution in both the machine direction and cross direction.
- Maximizes performance for reduced losses during grade change-overs and for continuous delivery of the highest quality paper.

OMNI Applications Library

By taking advantage of the available CPU power of the Quality Manager, MXOpen can support a comprehensive library of proven control applications.

- Preconfigured control strategies are built into the Quality Manager's OMNI software.
- MXOpen can easily accommodate your mill's continuous quality improvement program.
- Flexible control builder and algorithm libraries make custom optimization applications easy to implement and maintain.

OMNI applications library provides a full range of operator displays for papermachine control.

Operators on the mill floor have complete access to information and control through the Environmental X-View Operation Station.

Profile Actuation —

Advancing actuator technology to increase productivity.

With an installed base of more than 3,000 cross-direction (CD) profile control systems, Measurex is the industry leader in papermachine optimization.

Measurex supplies custom-engineered actuator and control solutions to meet the unique quality and competitive requirements of any papermachine, regardless of vintage, measurement or grade.

From weight profiling at the headbox through coordinated moisture control in the dryers, to advanced coating and finishing technologies on and off machine, Measurex has the most complete range of profile control capabilities.

Measurex Devron's broadest range of CD actuators include:

- ThermaTrol™ and AutoSlice™ weight profilers.
- Devronizer™, AquaTrol™ and InfraTrol™ moisture profilers.
- Calendizer™ and GlossTrol™ gloss profilers.
- Calcoil™ and CalTrol™ caliper profilers.
- Jointly developed Measurex/ Beloit consistency profiler for Concept IV-MH headboxes.

Networked-Based CD Solutions

As an integral member of the MXOpen family, the Profile Manager resides on the MXOpen LAN, providing fast, secure data transmission for quick and accurate actuator control.

With easy-to-use X-View Operator Station displays, the
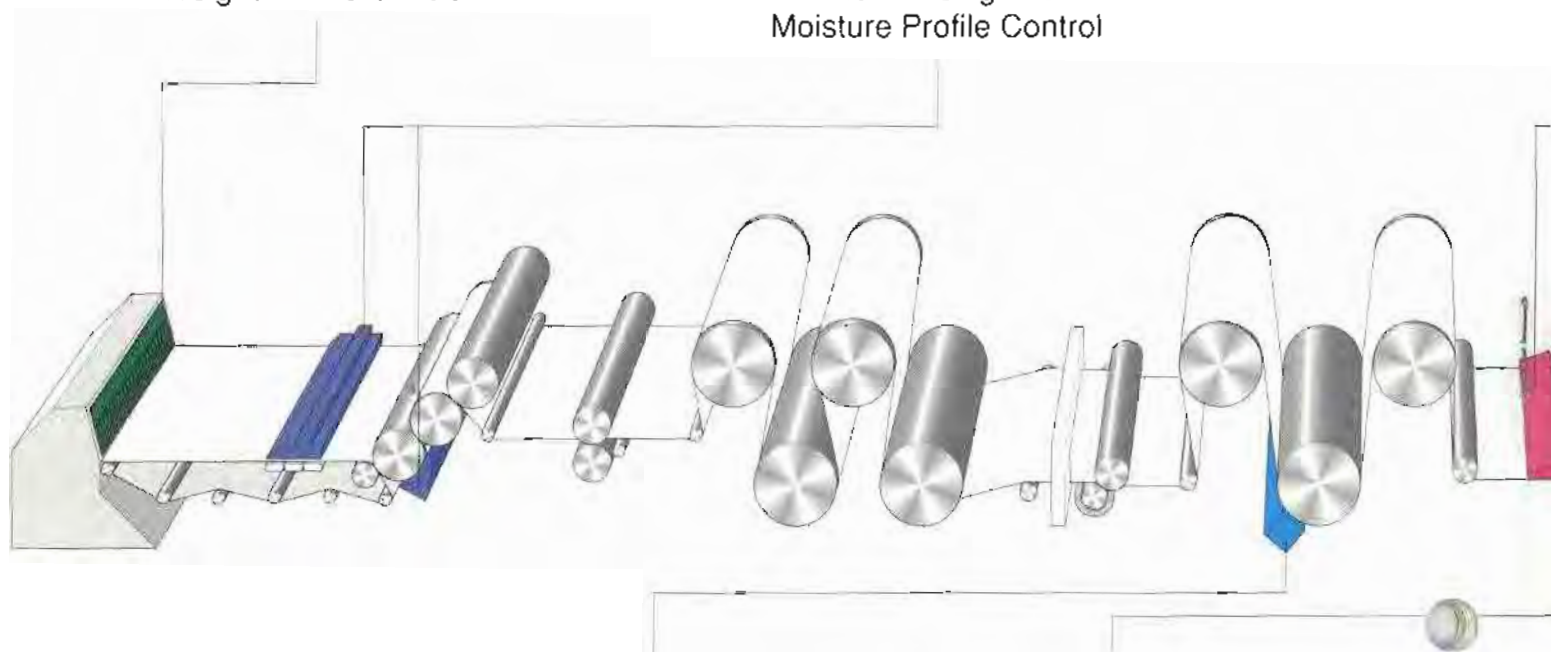
ThermaTrol/AutoSlice
Weight Profile Control

Devronizer
Hot Pressing and Moisture Profile Control

AquaTrol
Moisture Profile Control

CalTrol
Caliper Profile Control

MXOpen Profile Manager ™ allows immediate access to critical actuator status data for fast startups and effective troubleshooting.

CDOpen

Epitomizing Measurex's commitment to an open architecture, CDOpen™ brings the benefits of Measurex advanced CD control to mills with non-Measurex control systems.

A specially designed foreign measurement support processor provides the measurement interface and the added security of full profile validation before any control actions are taken.

AquaTrol profiler provides precise remoisturizing in the dryer section, minimizing CD moisture variation and reducing energy use.
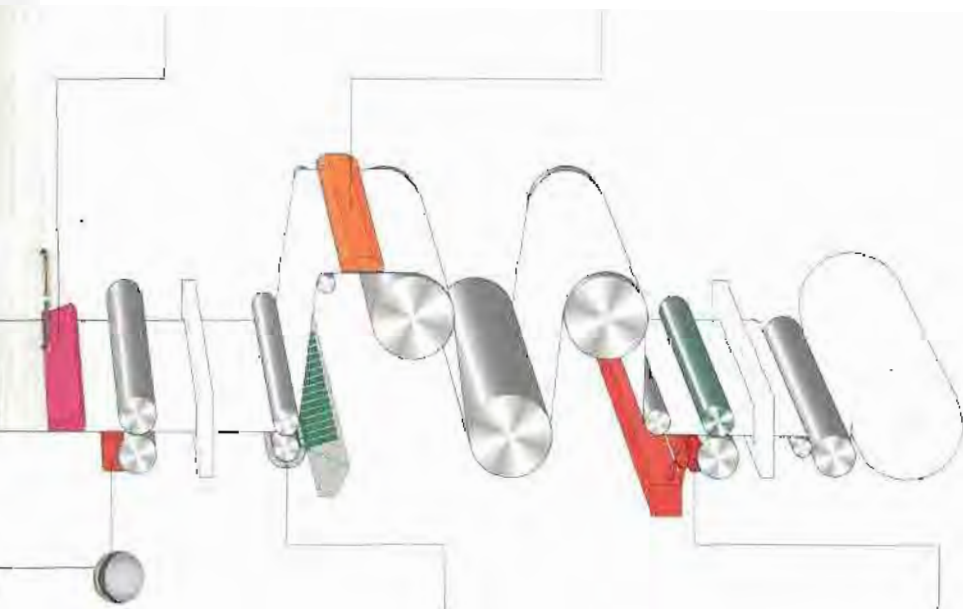
Calendizer
Smoothness and
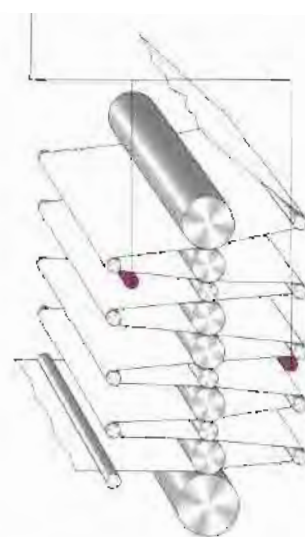Gloss Control

InfraTrol
Drying and Moisture
Profile Control

GlossTrol
Gloss Control of Coated
Sheets on Supercalenders

AutoCoat/BladeTrol
Coat Weight Control

Calcoil
Caliper Profile Control

Intelligent
Sensors & Scanners—

Results continue to improve

with advances in sensors and

intelligent processing.

Measurex has more than 70 on-line sensors which directly measure all aspects of product quality. Our commitment to continuous improvement has resulted in the development of the MXOpen PrecisionPLUS measurement platform.

- Fastest, most reliable real-time information, so you can deliver more first-quality paper.
- Industry's broadest range of on-line sensors and scanners help you improve your process and your bottom line.
- Continuous and self monitoring, detects and alarms system faults before product quality can be compromised.
- Expert alarm instructions for fast diagnosis and trouble-shooting.

Reliable Sensor Performance

PrecisionPLUS's EnviroPak™ environmental sensor enclosure ensures superior reliability and dynamic performance.

- Completely shields sensors from heat, dust and moisture, ensuring measurement accuracy.
- On-board intelligence converts sensor signals to digital form, maintaining "No Noise™" measurement fidelity.

High-Speed Scanning

Fast scanning quickly reveals changes in the profile, enabling fast control response and the clearest view of product quality.

The PrecisionPLUS family of sensors and scanners is optimized for speed.

Advanced Caliper Sensor

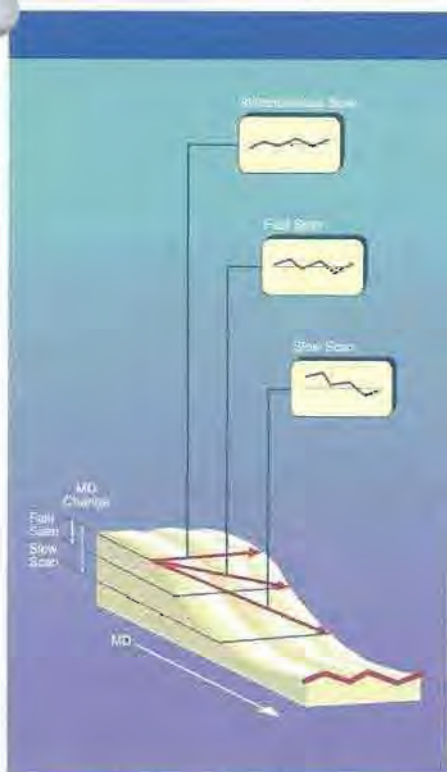The EnviroPak's field replaceable intelligence module allows quick and easy maintenance.

Zoom Profile display lets you "zoom in" on the profile for a closer look at product quality.

- Traverses the web at up to 40 centimeters per second.
- Measurement bandwidths up to 200 Hz.

Advancing Technology

Year after year, Measurex continues to improve its leading measurement technology through a large and focused research and development effort.

- Technology improvements in basis weight, moisture and caliper sensors establish new measurement standards.
- New sensor technologies for color, strength and formation put these traditional lab measurements on-line.

Fast scanning helps exclude MD variability from the profile. This enables reduced filtering for faster profile response and tighter profile control.

Web Inspection —

Continuous visual inspection

ensures total quality manage-

ment.

Today's competitive challenges demand that papermakers take the next step in continuous quality improvement — 100 percent quality inspection. The MXOpen Web Inspection System provides real-time, diagnostic and historical data of product defects so you can eliminate any off-spec material and increase your saleable output.

- The MXOpen Inspection Manager™ incorporates a high-performance, digital signal processor for real-time quality analysis of visual data.

- State-of-the-art CCD camera technology provides unmatched resolution and speed of detection. Each camera delivers cross web visual data up to 10,000 times a second. The result is a high-resolution picture of the visual quality of the entire paper web, including the critical sheet edges.

- Two illumination methods — transmission and reflection — ensure that Inspection Manager can be used successfully on all paper grades.

- Integral trending and analysis displays allow papermakers at consoles anywhere on the open network to observe defects and determine their exact location and potential sources, such as felts, wires or rolls.

- Historical information about web defects from multiple Inspection Managers can be stored on the MXOpen X-View Application Station's relational database for archival and analytical purposes.

High speed CCD camera captures visual web defects faster than the human eye.

Visual inspection combined with on-line sensor readings give papermakers the total quality picture.

Enterprise Management —

From millwide visibility to

production and information

management — all in one

seamless network.

OptiVISION™ brings you closer to your customers. Through a fully integrated production and quality management system, OptiVISION gives you the manufacturing tools you need to achieve total customer satisfaction. Grouped into four functional areas, OptiVISION integrates your total operations:

- OptiSERV™ facilitates all aspects of customer orders, invoices and after-order services.
- OptiPLAN™ generates block and run schedules, manages trim optimization, winder and finishing line scheduling, and coordinates raw materials and finished materials planning.
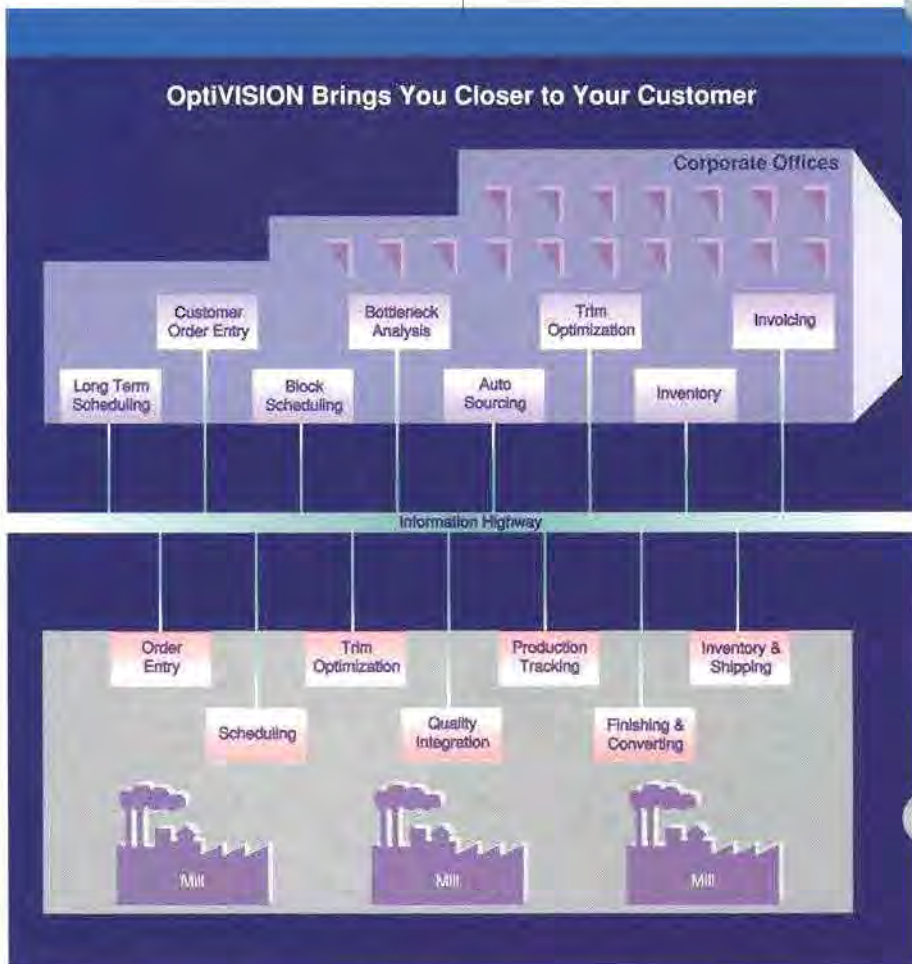- OptiTRAK™ keeps track of your product from chip to

ship. Customer quality specs are compared to actual on-line and lab data, ensuring customer requirements are always met.

- OptiSHIP™ manages finished goods inventory and customer shipments.

Whether you have a single mill or multiple sites, OptiVISION is flexible enough to meet your needs. By installing OptiVISION, you'll be able to:

- Improve customer service.
- Increase manufacturing yields and efficiencies.
- Ensure higher quality.
- Optimize inventory.
- Deliver shipments on time.

OptiVISION Enterprise, installed throughout your corporation's

OptiVISION Brings You Closer to Your Customer

mills, provides total manufacturing control and consistent customer service. All your production sites are linked to corporate order management and planning, allowing you to balance production capacity, inventory and transportation costs with customer demands.
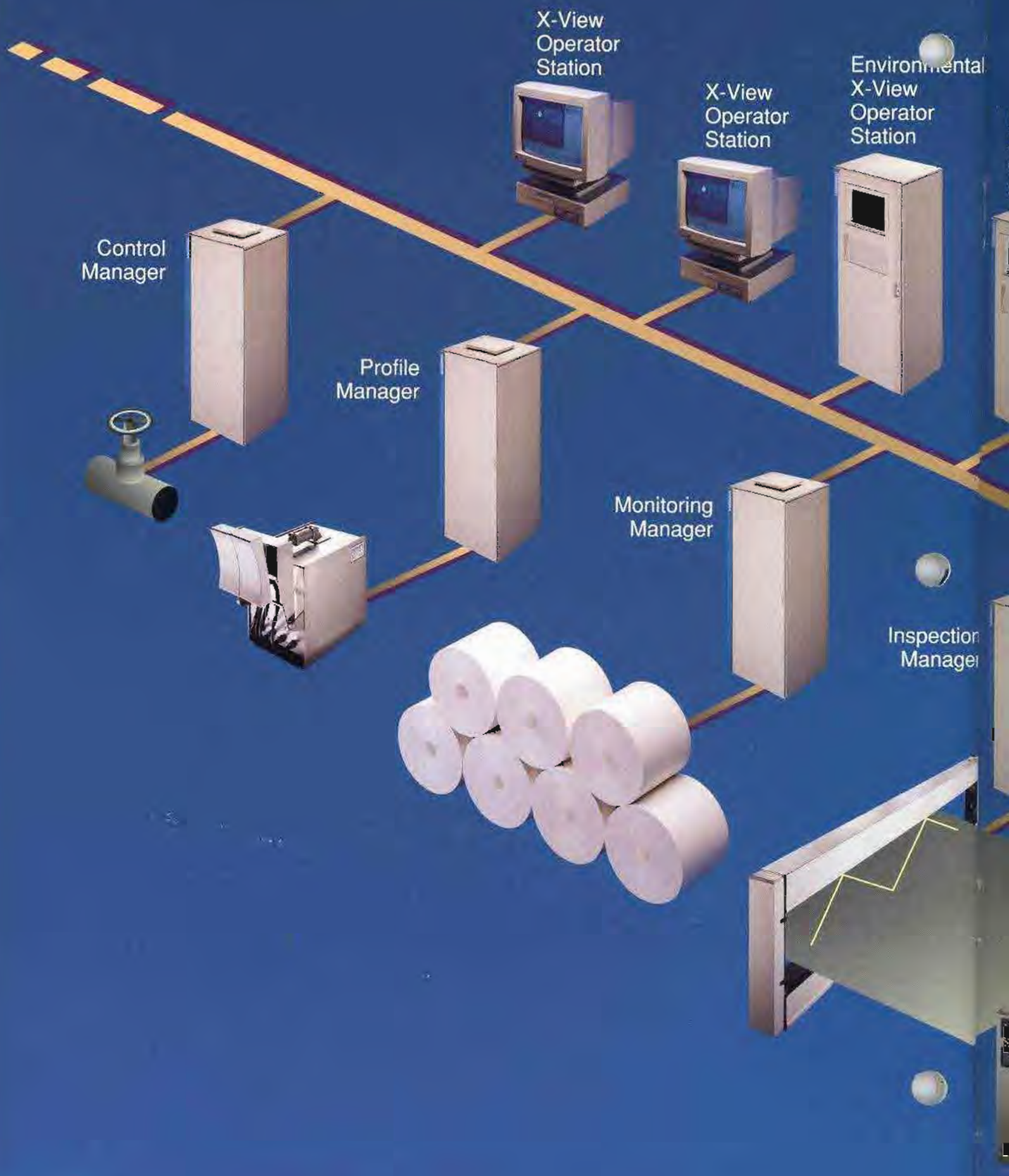
No Compromise Integration

- Allows complete information visibility, from the mill floor to the complete enterprise.
- Multiple windows.
- Seamless communication.

The bottom line: you can truly manage your entire operation with an open solution from Measurex.

Jefferson Smurfit in Middletown, Ohio, uses OptiVISION to deliver customer orders on-time, at the lowest cost, with complete traceability.

X-View
Operator
Station

X-View
Operator
Station

Environmental
X-View
Operator
Station

Control
Manager

Profile
Manager

Monitoring
Manager

Inspection
Manager