

25 YEARS
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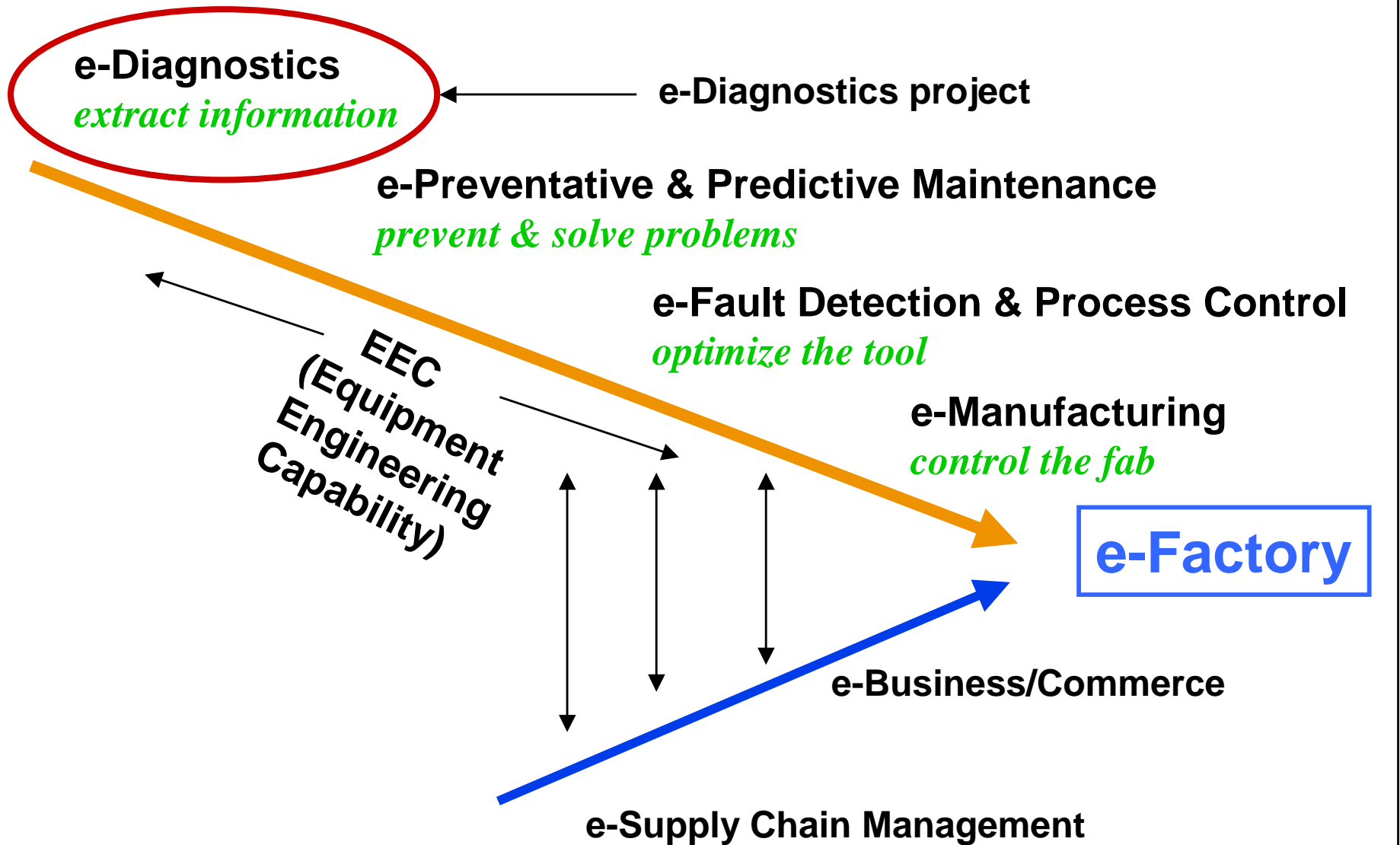
e-Collaborations

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INTERNATIONAL
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Path to e-Factory - ISMT



Global Collaboration Objectives

- **Move to highly efficient factories**
 - e-Manufacturing
 - Induce smooth and rapid transition for shared advantage
- **International collaboration**
 - ISMT and Selete/JEITA
 - Investigate necessary capabilities
 - leverage tool performance & availability
 - Task sharing
 - between device makers and suppliers
- **More cooperation in the industry**
 - Guideline roll out
 - enhanced IT infrastructure
 - Collaborative schedule

EEC Collaborations

e-Business

e-Manufacturing

Product and pre-product's e-Commerce

Chip buyers support

Spare parts logistics, etc.

Equipment Engineering

Real time control (APC/AEC)

Machine-to-Machine difference management

Maintenance scheduling, etc.

e-Diagnostics

e-Manufacturing Capabilities

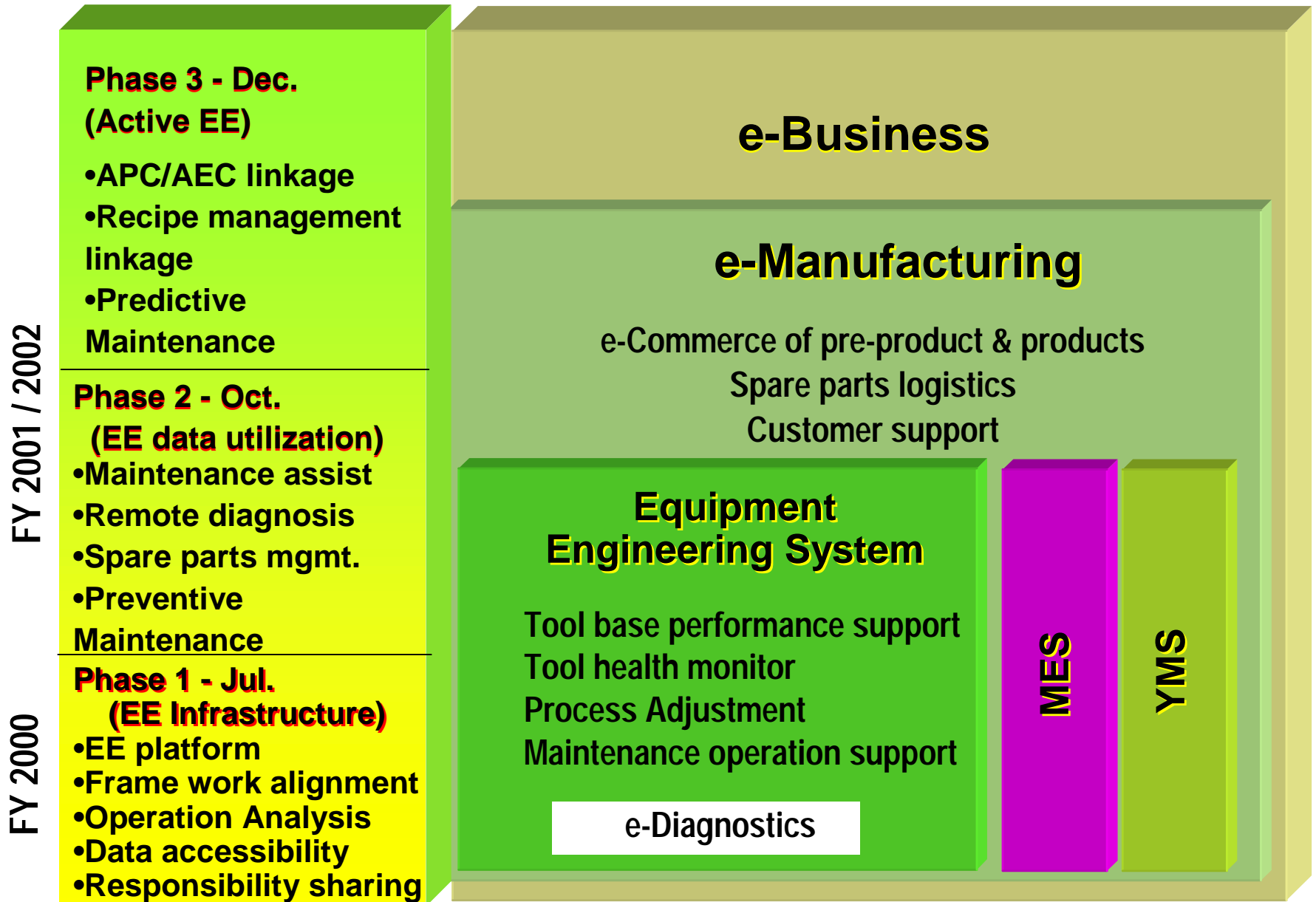
- **APC (Advanced Process Control)**
 - Real time process control (in-situ)
 - Feedback / Feed Forward / Run-to-Run (Wafer/Lot)
 - Usage Adjustment (Equipment)
 - Fault Detection & Classification
 - Statistical Process Control (SPC)
- **Recipe Management**
- **e-Diagnostics**
 - Tool Operations Tracking
 - Machine-to-Machine Difference Management
 - Spare Parts Management
 - Maintenance Scheduling
 - Maintenance and Trouble shooting assistance
 - Predictive Maintenance

What is Equipment Engineering?

EE focuses on tool availability and performance improvement

- Line throughput and maintenance improvement
 - Change the maintenance model (local and/or remote)
- Tool health monitoring (including sensors) and troubleshooting
- Tool performance improvement
 - Especially newly introduced tools
- IC Makers and supplier collaboration (improvement, troubleshooting, re-design.....)
- Tool, parts, assembly versions, modification management
- Maintenance operation management, planning
- Precise process control
- Reduction in the number of Non-Product Wafers
- Open architecture (platform and application)

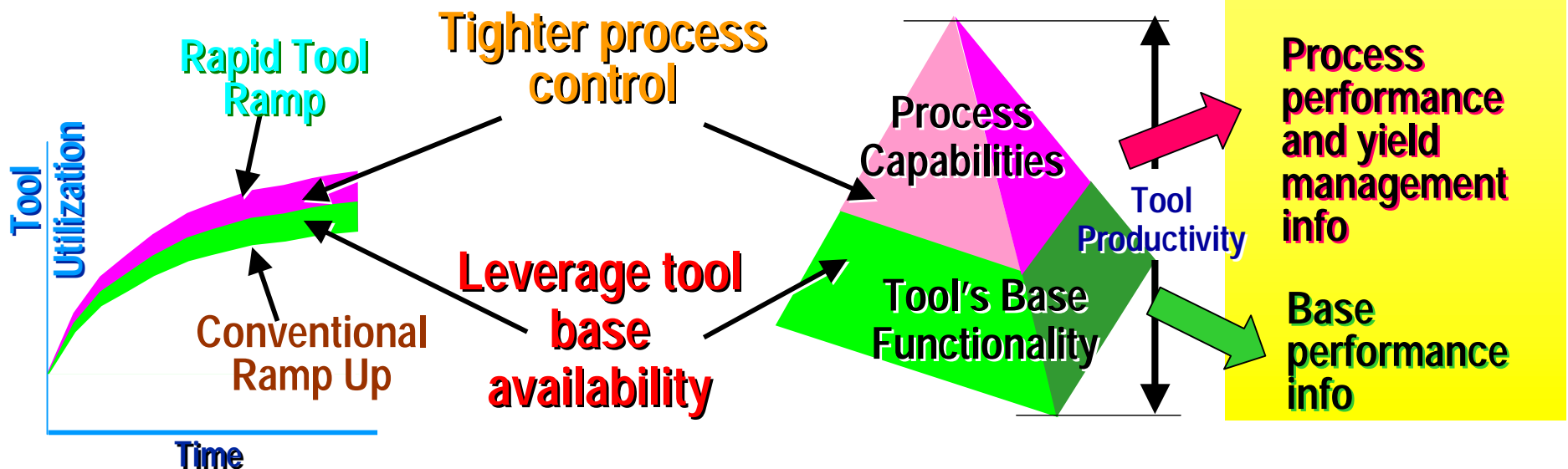
EEC Working Group Plans



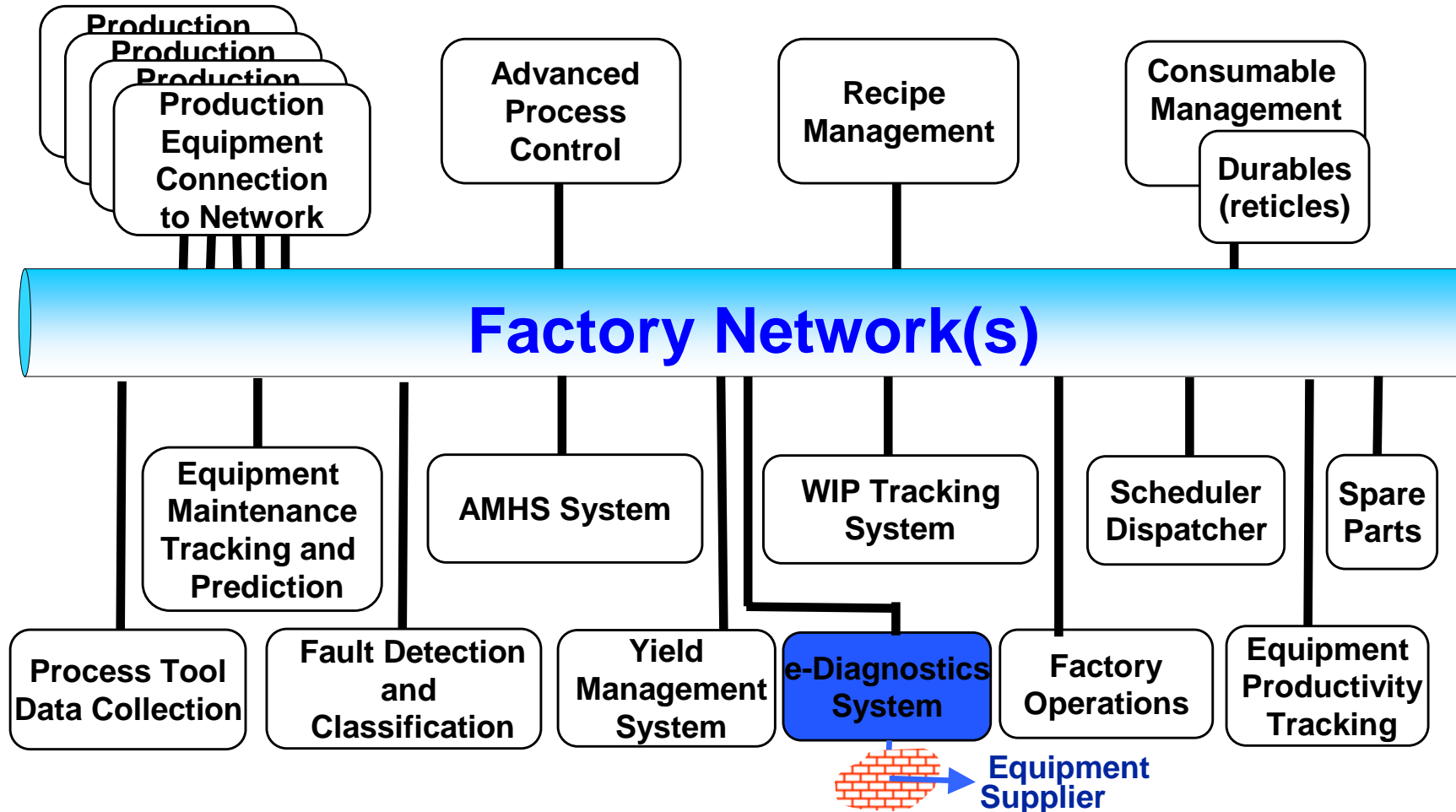
New tasks and information are needed

- **Better tool performance from:**

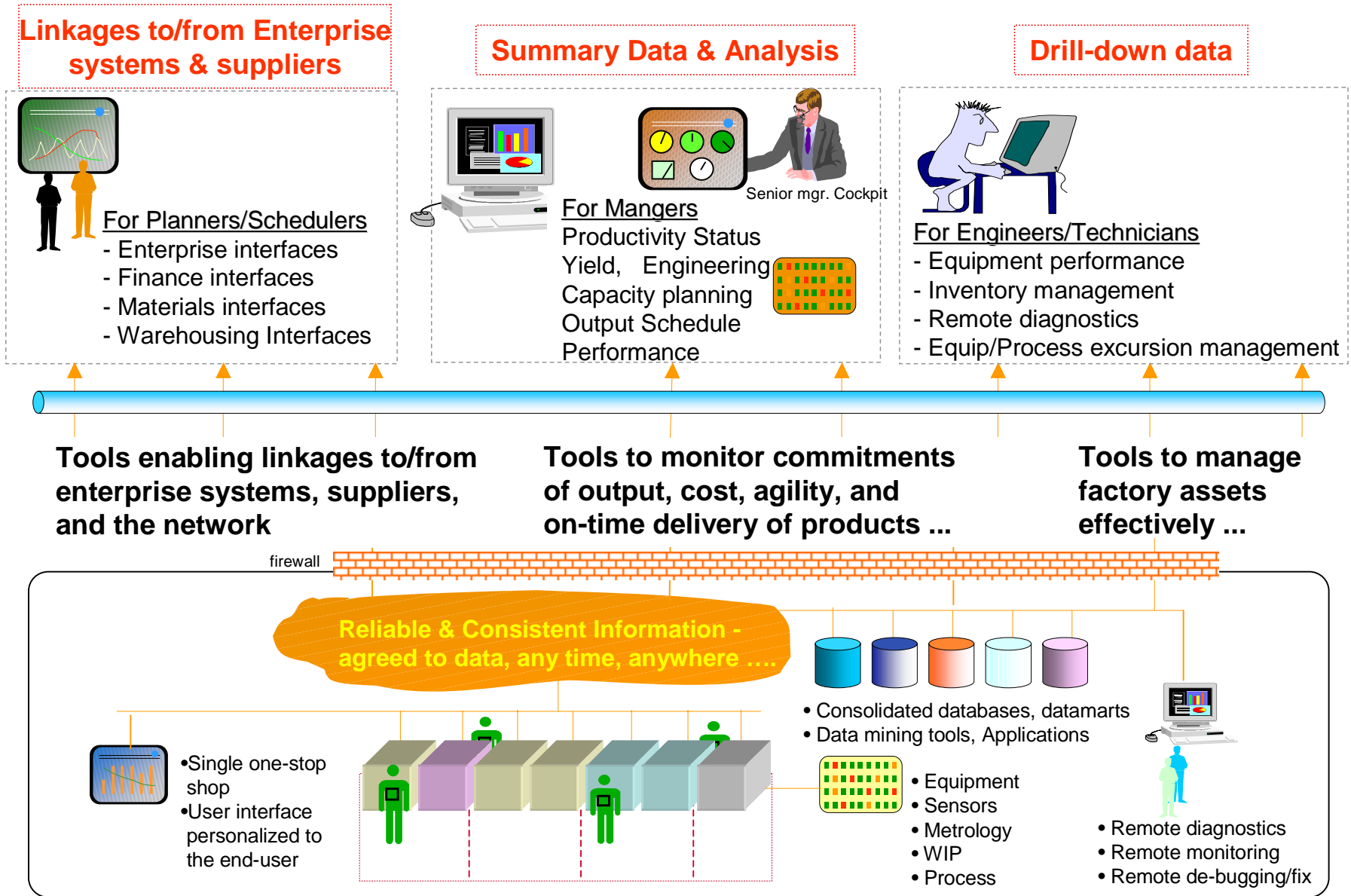
- Process performance improvement & maintenance
 - Device makers focus on what they understand or feel responsible for
- Base functionality improvement & maintenance
 - Improvement task sharing has not been well defined in industry
 - Access to necessary information has not been well defined
 - Example
 - Supplier's FDC or Device maker's FDC, or both?



OEE Improvement through Global Factory Information System Guidelines



An e-Manufacturing Vision



Global EE Capabilities Collaboration

- **Proposal for new capability infrastructure**
 - Another ISMT & JEITA/Selete consortia driven global activity
- **Area of collaboration**
 - Establish international consensus on required EE Capabilities
 - Introduction of EECs into factory frame work
- **Unified message**
 - Unified requirements
 - Roll out guidelines and best practice documents in FY2001

