

DevCon 2006

OPC Unified Architecture

A 3-day Conference for: **Decision Makers, Engineers & Visionaries**

The OPC Foundation

10 Years of Success



Thomas J. Burke

OPC Foundation President & Executive Director

October 2006

Today's Plan

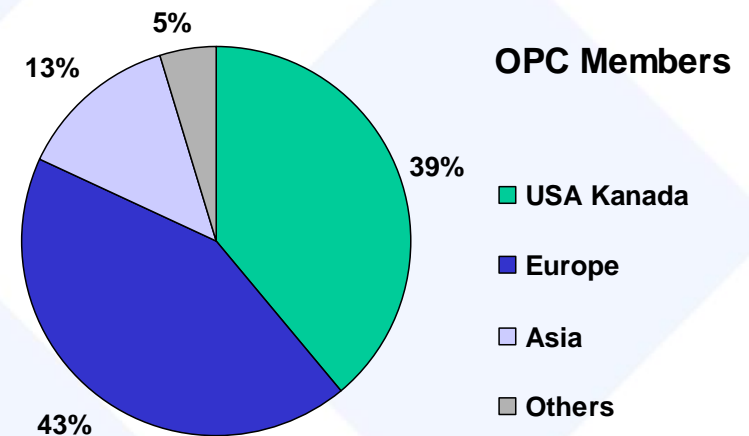
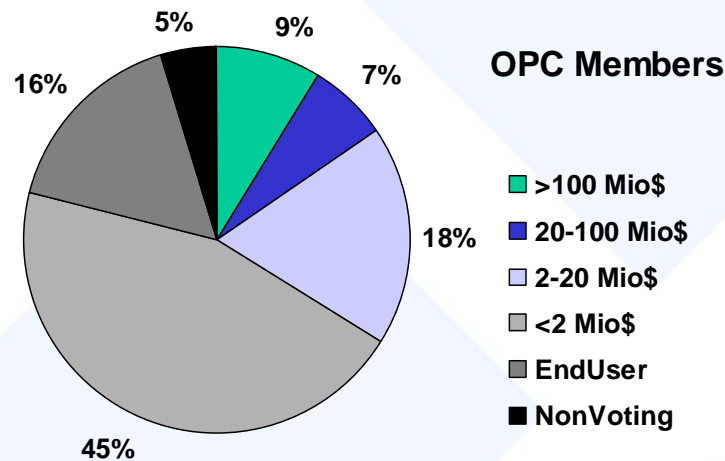
- **Breaks mid-morning and mid-afternoon**
- **Lunch at Noon**
- **Wrap-up between 4:00 - 5:00**
- **Refreshments follow**
- **Dinner Tonight 07:00pm**



Where did OPC come from?

- 1995 OPC Foundation task force
 - Spin-off from WinSem Group
 - Intellution, Rockwell Software, Fisher Rosemount, opto 22, (intuitive)
- “solve the driver problem”
- Success is measured by level of adoption
- High-value vendor problem solved
- Proven Technology

The Members



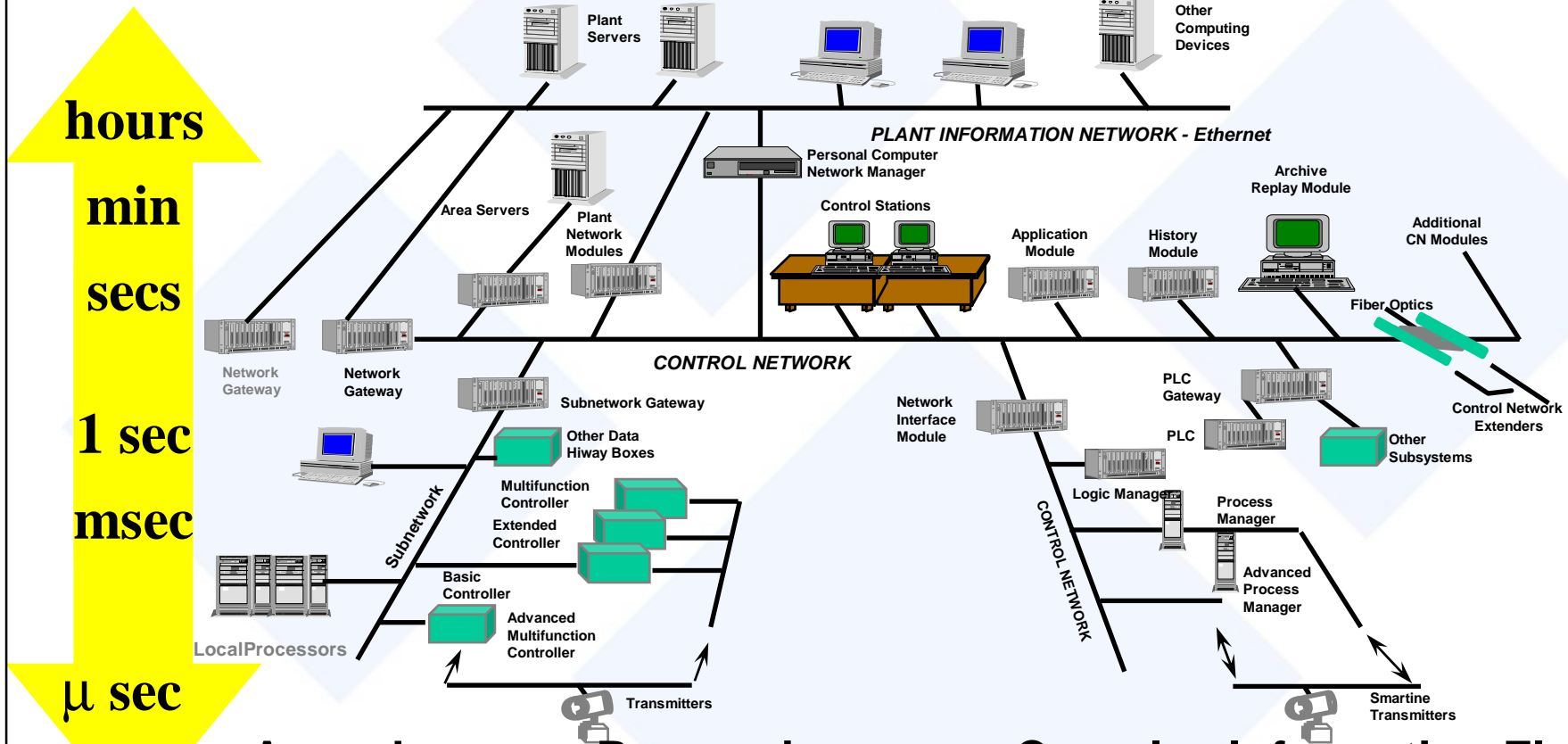
- **Memberships to annual turnover**
 - All „big“ automation companies are members (Siemens, ABB, Rockwell, Honeywell...)
 - 45% of all members are small companies (<2 Mio\$)
- **Membership distribution per continent**
 - Equal amount of members within Europe and North America

Why OPC ?

- Interoperability
- Standards : fact or fiction?
- Where did OPC come from?
- Four Core Companies
- OPC Foundation
- Write a communications driver one time
- Solve World Hunger?

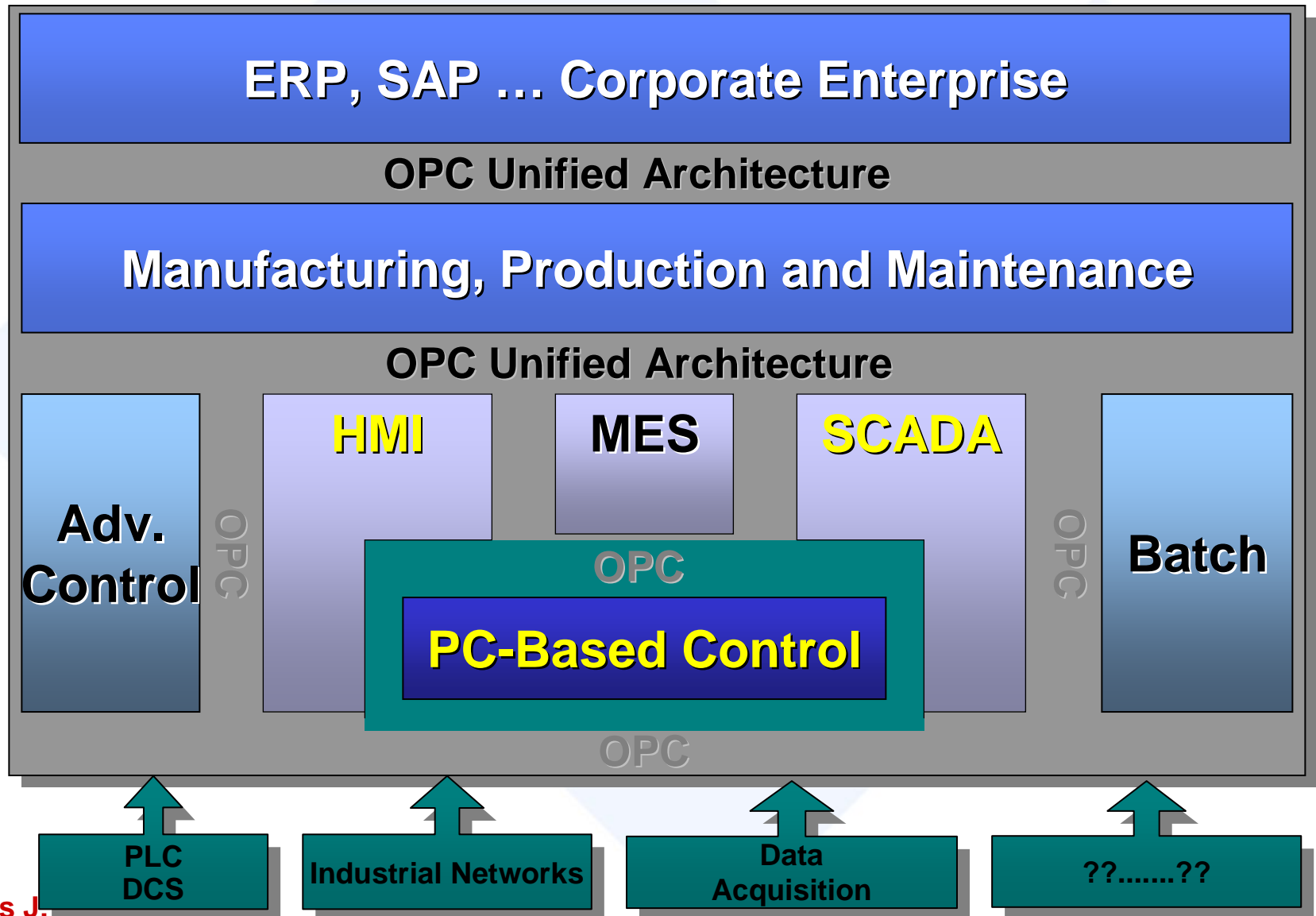


The Plant : a Complex Environment with many opportunities for standards for interoperability



- Asynchronous Processing
- Multiple Interfaces
- Mission Critical
- How To Manage Changes?
- Complex Information Flows
- Multi-vendor
- Proprietary

OPC Provides Industry-Standard interOperability, Productivity & Collaboration



History of OPC Foundation

- September 1996
 - Formation of: Fisher-Rosemount, Rockwell Software, Opto 22, Intellution, and Intuitive Technology
- February 1997
 - Foundation of OPC Europe
- October 1998
 - Release of Data Access Specification 2.0
- June 1999
 - Release of Alarm & Events Specification 1.0
- 2000
 - OPC XML and OPC DX were announced
- October 2002
 - Release of OPC XML-DA Specification 1.0
- **2004 >>> OPC UA Workgroup Kick-Off**

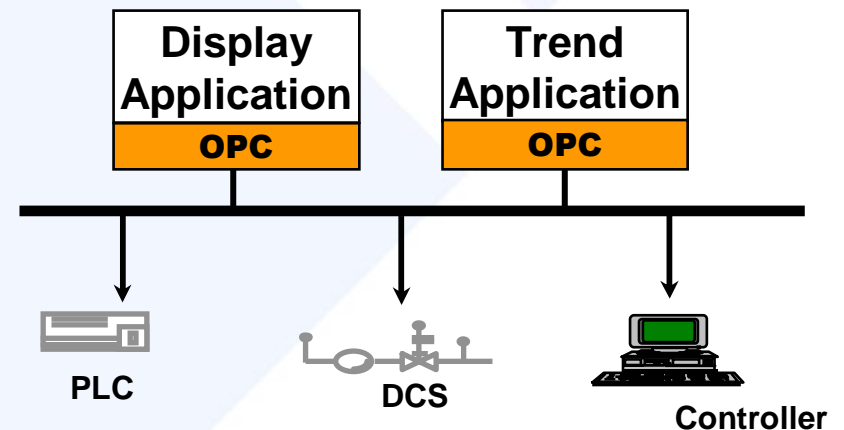
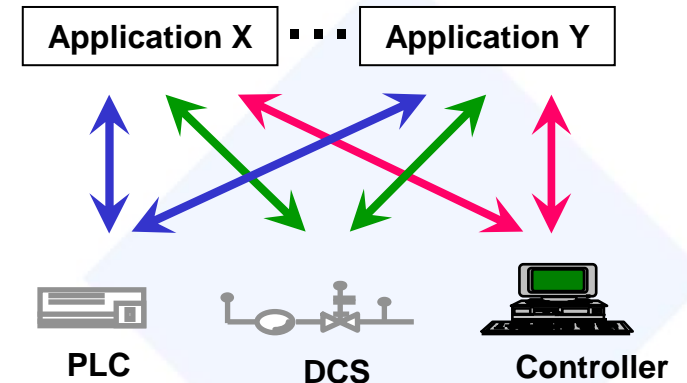
OPC History

• The Problem

- Many different vendors
- Custom made solutions
- Proprietary technologies
- Point-to-point Integration
- Limited “real-time” information
- Maintenance nightmare
- Multiple dependencies

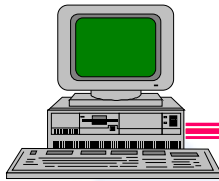
• Solution

- OPC



OPC Data Access Architecture

MES and/or HMI Applications
(OPC Client)



OPC Server

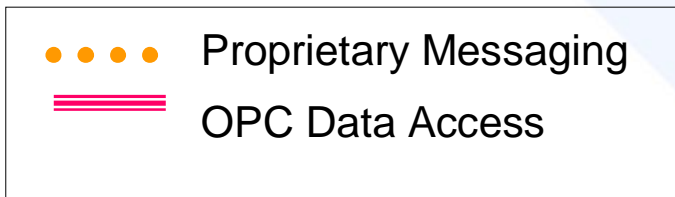


Software App provides a linkage between OPC Client(s) and devices

PLC



PLC

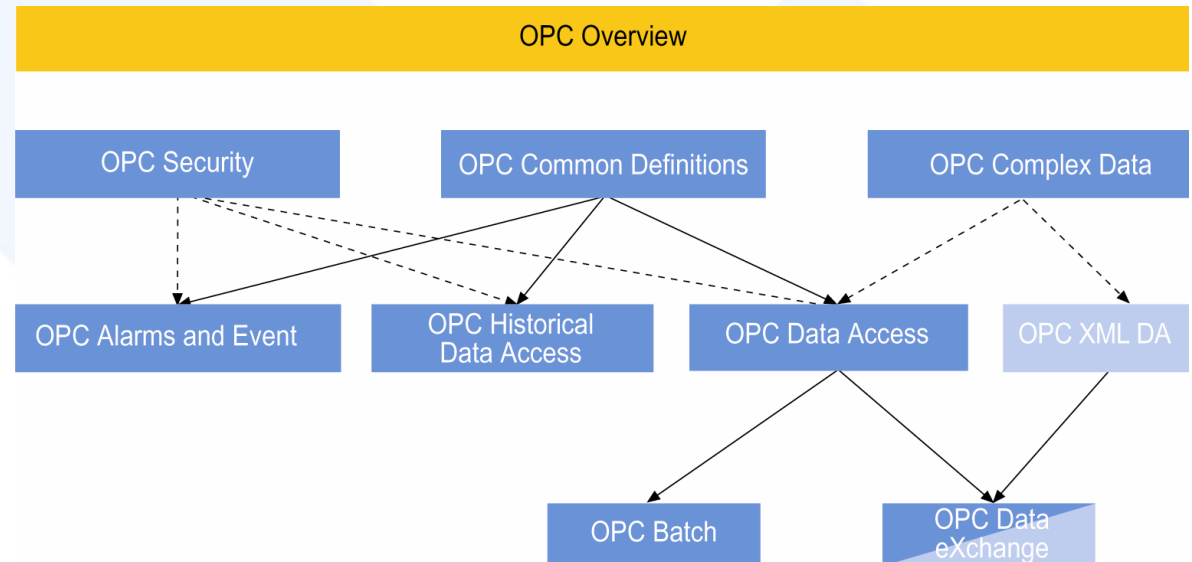


OPC is Successful Because

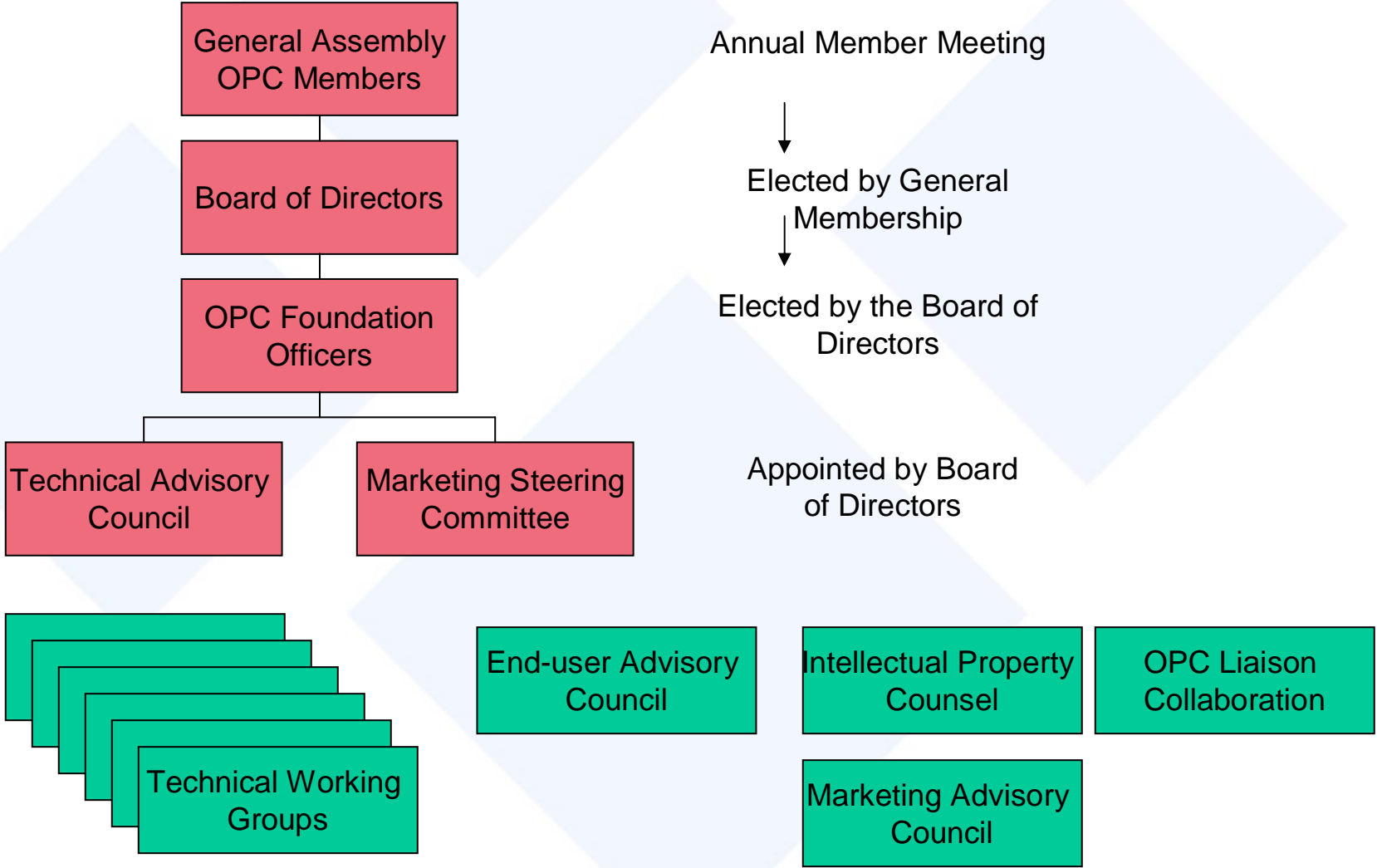
- Success is measured by level of Adoption
- OPC Members Dedication
 - Design & Build & Deliver
 - Compliance / Interoperability
 - End-users demand certification
- OPC Products Universal
- Industry Endorsement of Interoperability
 - End-users, analysts, vendors, media, Microsoft

OPC – Functional Areas

- Data Access
- Alarms & Events
- Historical Data Access
- Complex Data
- Batch
- Data eXchange
- XML Data Access
- Commands
- Security



OPC Foundation Organization



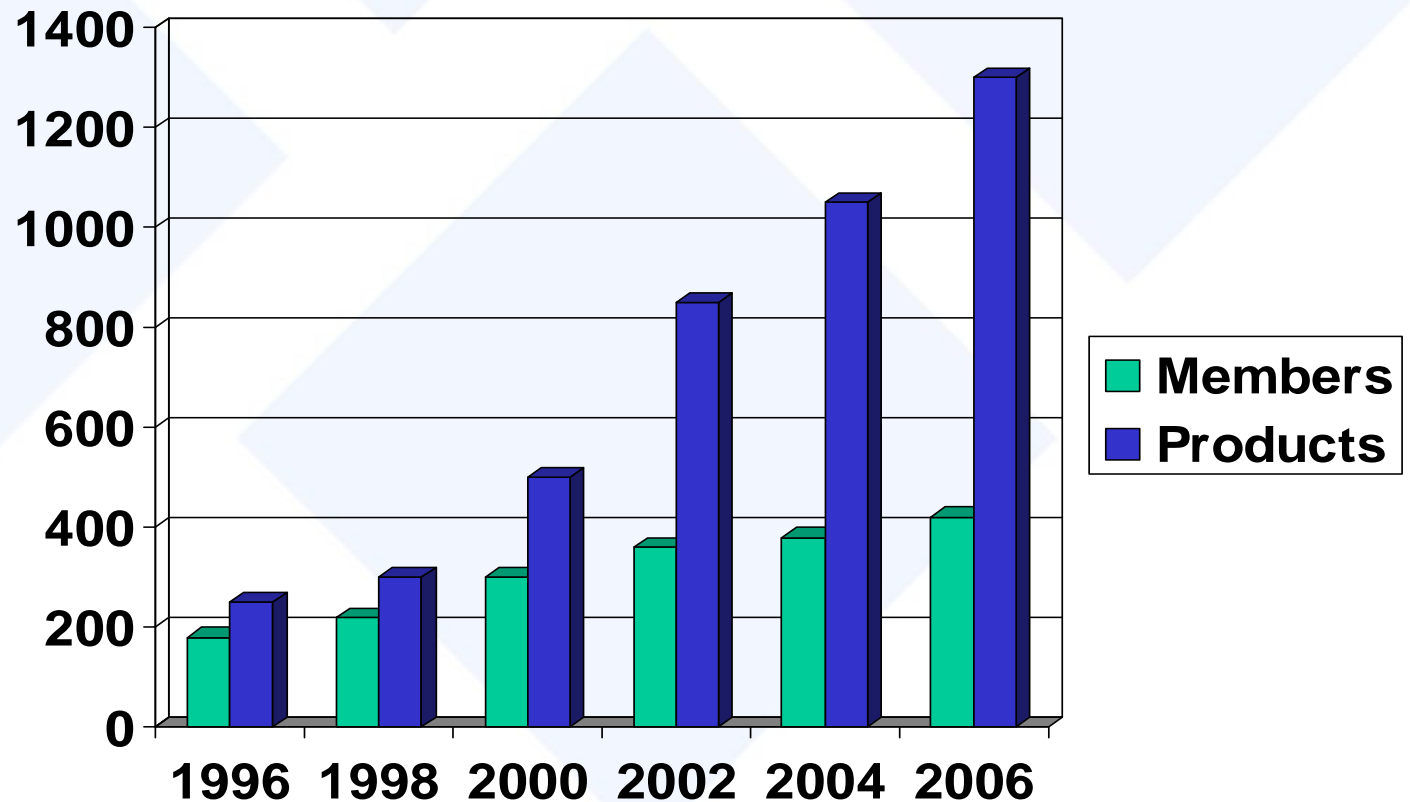
OPC Foundation

- International Industry Standard Organization
 - 400+ Member Companies / 100+ end-users Members
 - 2500+ Total Companies Build OPC Products = 15000+ Products
- The vision of OPC is to be the Foundation for interOperability
 - for moving information vertically from the factory floor through the enterprise of multi-vendor systems (with stops in between...)
 - For moving information horizontally between devices on different industrial networks from different vendors;
 - Not just data but information.....
- Reliable, Secure Integration is not an Option
- Collaboration is key to pulling multiple “open” standards into unified open platform architecture....



OPC Today

- Continuous growth over the last 10 Years
 - Membership
 - OPC Products (registered in Product Catalog)
 - Thousands more not in catalog



OPC in action

- Monitoring Trends and Technologies
- Collecting Feedback from End User and Members
- Permanently improving OPC
- Road Shows, Seminars, Technology Events
- Emerging new Markets
- Investigating up-to-date Technology
- Collaboration with major Organization

- Volunteers work in all OPC working groups drives technology forward and prepares for future challenges

OPC Tomorrow



- Extensive growth in the field of high level application is expected, software marked above HMI and SCADA
- Extensive growth in the field of embedded devices and intelligent sensors is expected, software marked below PLCs and drivers
- Membership growth up to 1000 within the next 6 years

- In 2002 UA working Group was announced
- 2 years of work by more than 25 permanently involved people, 12x4days meetings, uncountable telephone conferences, thousands of working hours

- >>> The way is paved for OPC Unified Architecture

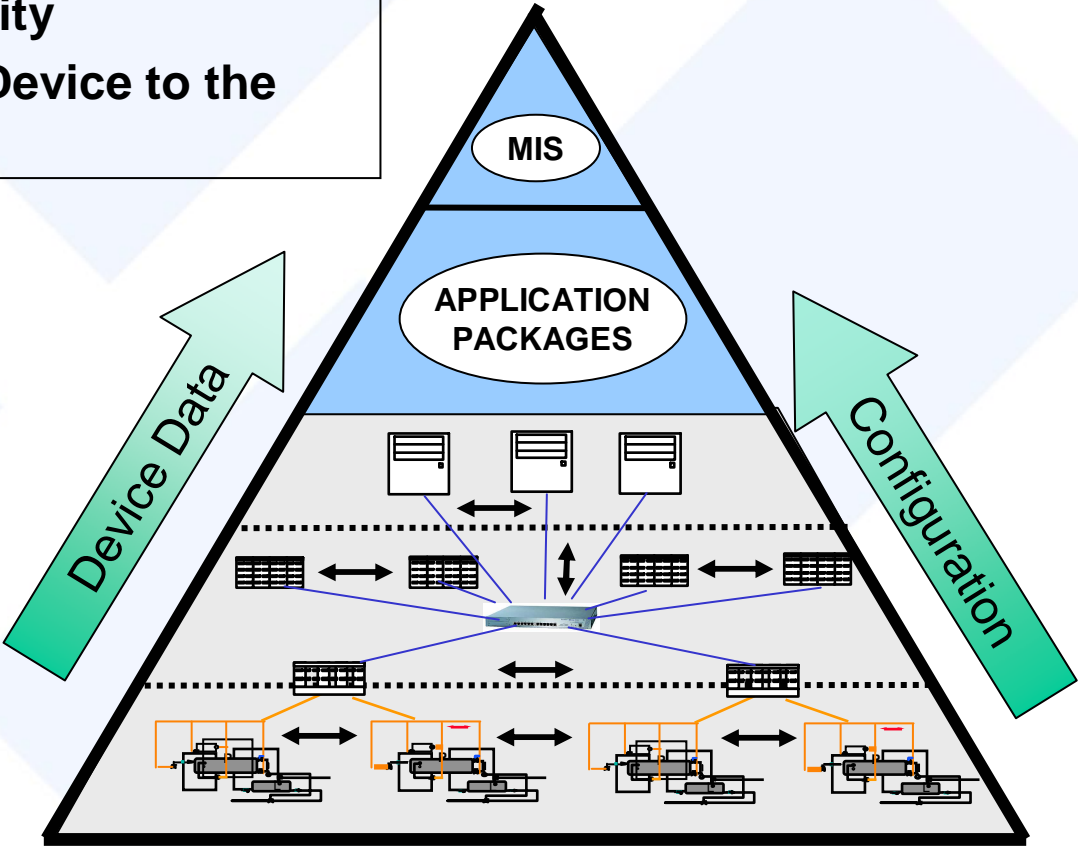
OPC Unified Architecture

**Open Standards to Deliver Interoperability
Device to Device and Device to the Enterprise**

**Enterprise Integration
(ERP, Asset Management, Advanced Diagnostics, etc.)**

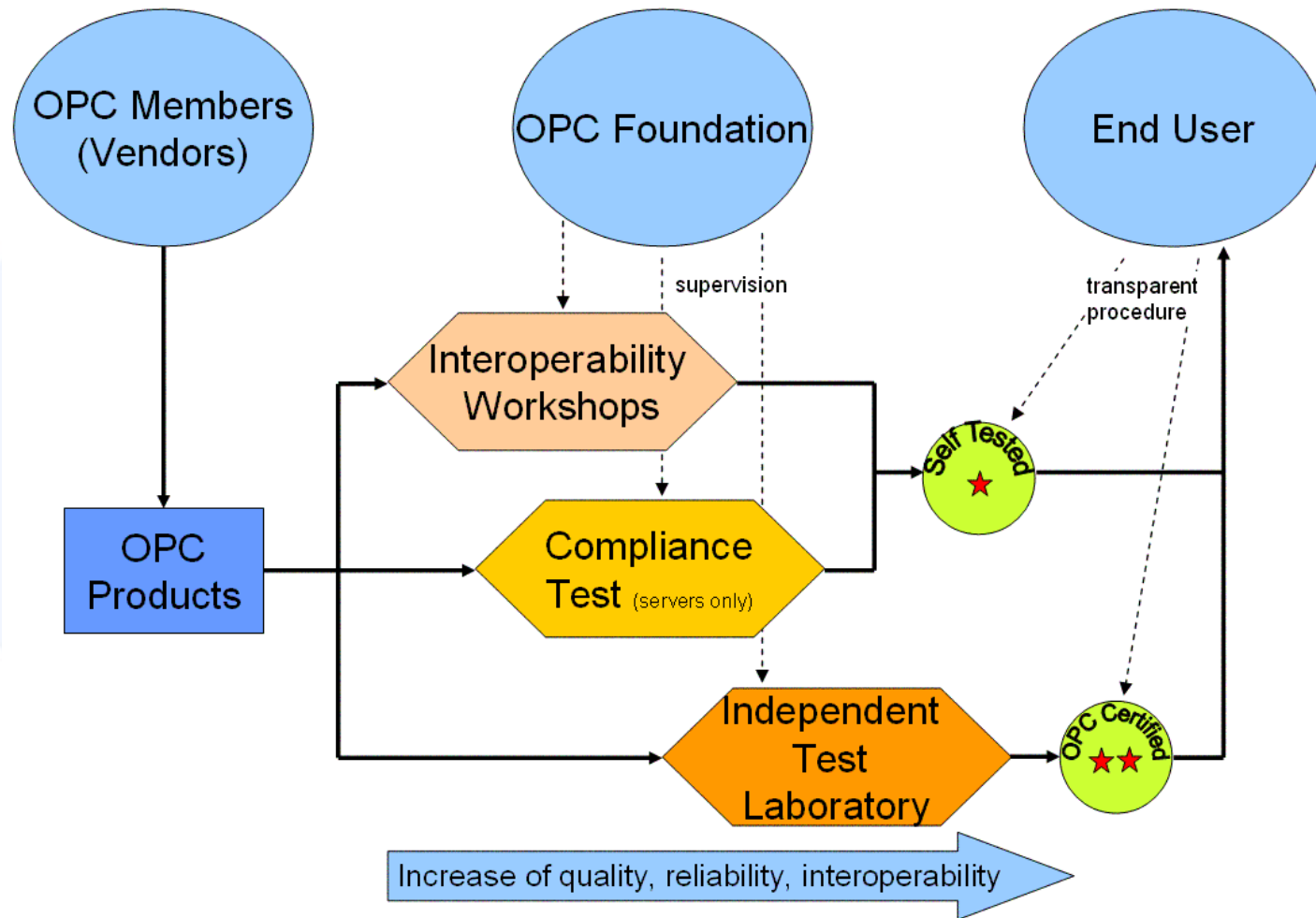
Subsystem Integration

**Device Integration
(FF, Profibus, HART, etc)**



- Why?
 - Reliability, Security, Interoperable, Maintainable ... Plug-N-Play
- What & How
 - OPC Compliance (self test)
 - OPC Interoperability Workshops
 - OPC 3rd Party Certification
 - OPC Certification Lab

OPC Compliance

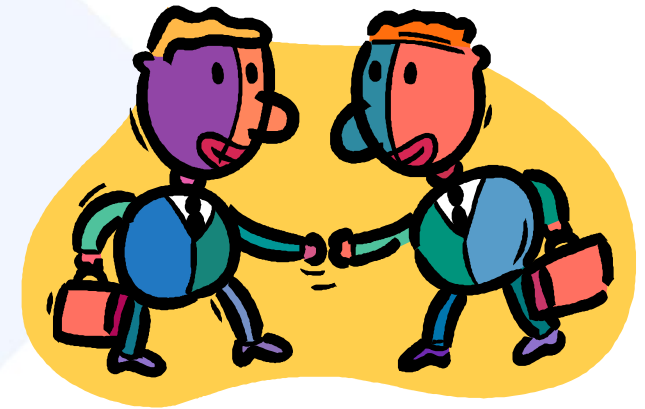


Cross Industry / Collaboration Interoperability Strategy

- **OPC used in process & discrete manufacturing**
- **OPC adopted in the following:**
 - **Semiconductor**
 - **Plant Maintenance and Production Management**
 - **Industrial Ethernet**
 - **Security**
 - **Building Controls**
 - **RFID**
 - **Retail/ Financial**
 - **....**
- **Collaboration with MIMOSA**
- **Collaboration with ISA (S88, S95, S99)**
- **Collaboration with OAGi**
- **Collaboration with IEC**
- **Collaboration with EDDL**
- **Collaboration with MS MUG & NAMUR**
- **Collaboration with** (stay tuned)

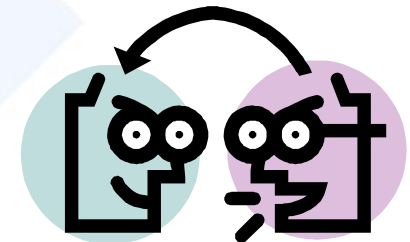
Markets

Collaboration

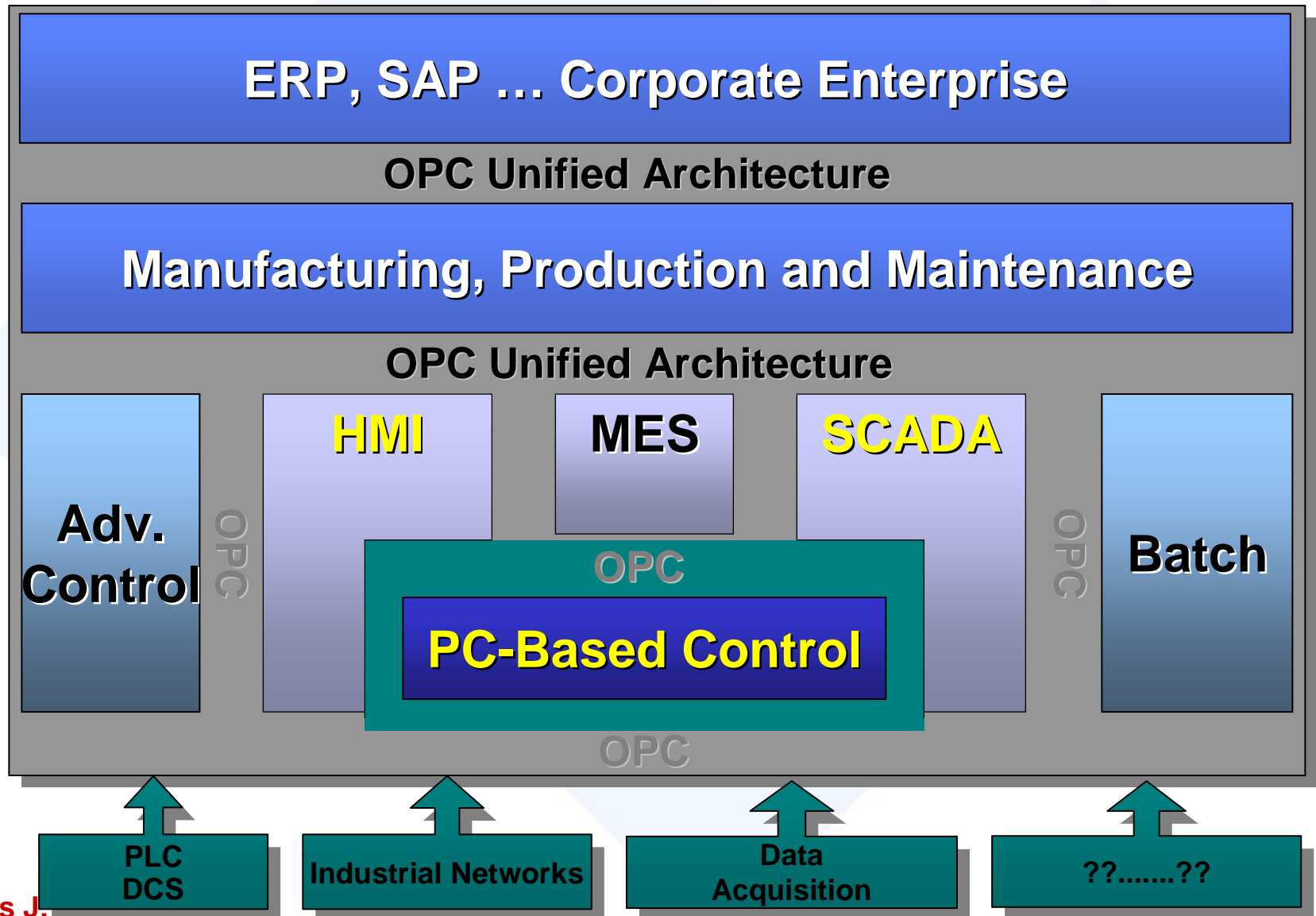


The Vision of OPC

- Success Is Measured By Level Of Adoption
- Collaboration
- 24/7 Reliability
- OPC Is Plug-and-play
- OPC Is Everywhere
- Get Connected



OPC Provides Industry-Standard interOperability, Productivity & Collaboration



Questions?

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