The Importance of Standards

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What is a “standard”?

- The definition of a "standard" is simple: operating specifications that everybody follows
- Standards provide openness and interoperability between products from different vendors.

Who benefits from standards?

- End-users are the primary beneficiaries of standards.
- However, few users are large enough, or strong enough, to demand and set horizontal standards.

Who drives standards?

- Standards are intrinsically difficult to implement and adopt.
  - End-users cannot drive standards;
  - Supplier involvement compounds the confusion.
  - Conflicting objectives continue to cause endless debate
- Someone has to be the leader, to develop the standard that others follow.

Committees are counter-productive

- Committees composed of both users and vendors often get stuck
  - Users collaborate; few can invest the time or expense necessary to drive a standard.
  - Vendors seldom agree; they are in direct competition with each other, each seeking to develop technology and market advantages over the other.

Conflicting standards inhibit growth

- Conflicting standards have bad effects for everyone.
  - Customers get confused and postpone purchases to see how the market settles.
  - Suppliers limit development investments in products that may end up on the losing side of the conflict.
  - Growth is inhibited and the market becomes fragmented.

The standards dichotomy

- *The basic cause of all the fuss*
  The Users want an Open bus
  They push and threaten, beg and plead
  “Interoperable” is what they need
  The widgets made by Vendor A
  With Vendor B must plug and play

- *The Vendors swear they all agree*
  But just can’t bear to make it free
  An open door will throw away
  Their value-core and make it gray
  Proprietary will be gone
  To hordes of hungry hangers-on

  - Jim Pinto Poem: “Open Saysame, Closed saysayou”

Pinto's Law of Open-systems Confusion

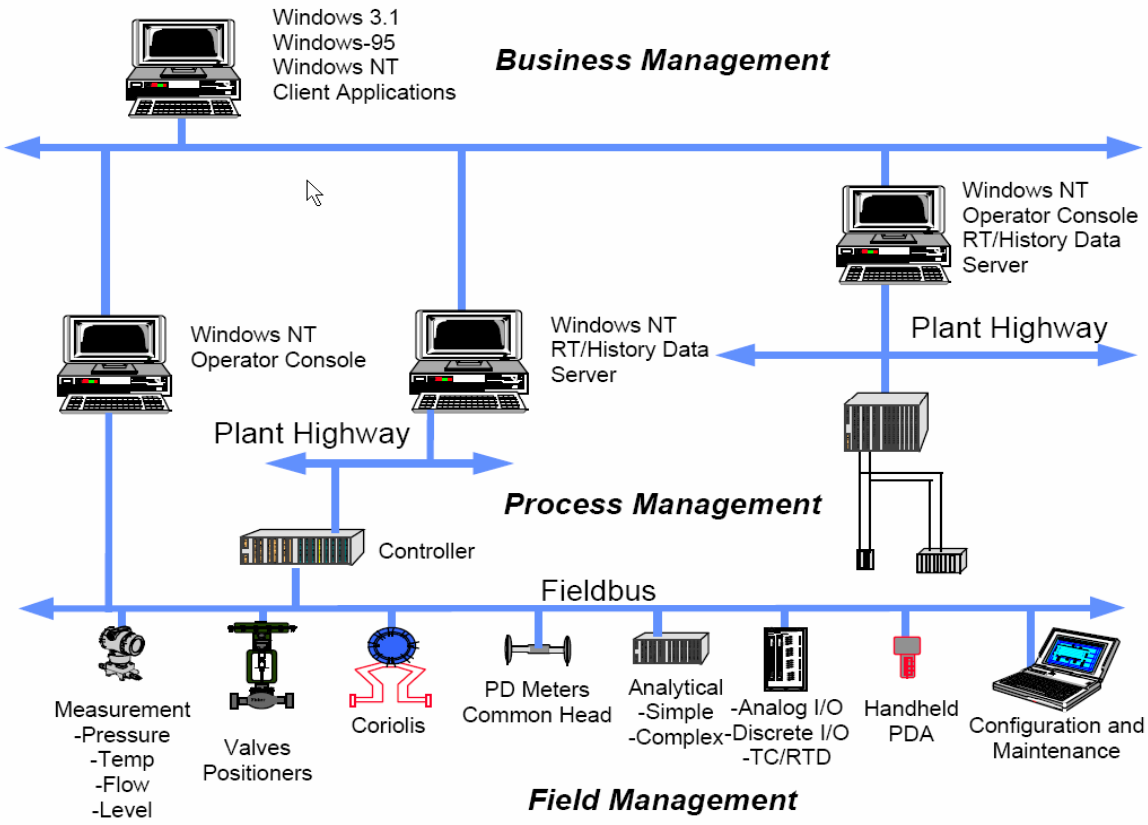
C = P x V / U

- where :
  C *is the Confusion*
  V *is the number of Vendor's supporting a "standard"*
  U *is the number of happy Users*
  and
  P *is Pinto's Confusion-factor, which decreases non-linearly with time*

Industrial Automation - a specialty niche

- Industrial automation is complicated by several conflicting issues
  - Performance and price limitations
  - Technical confusion
  - Limited spread beyond narrow applications environments

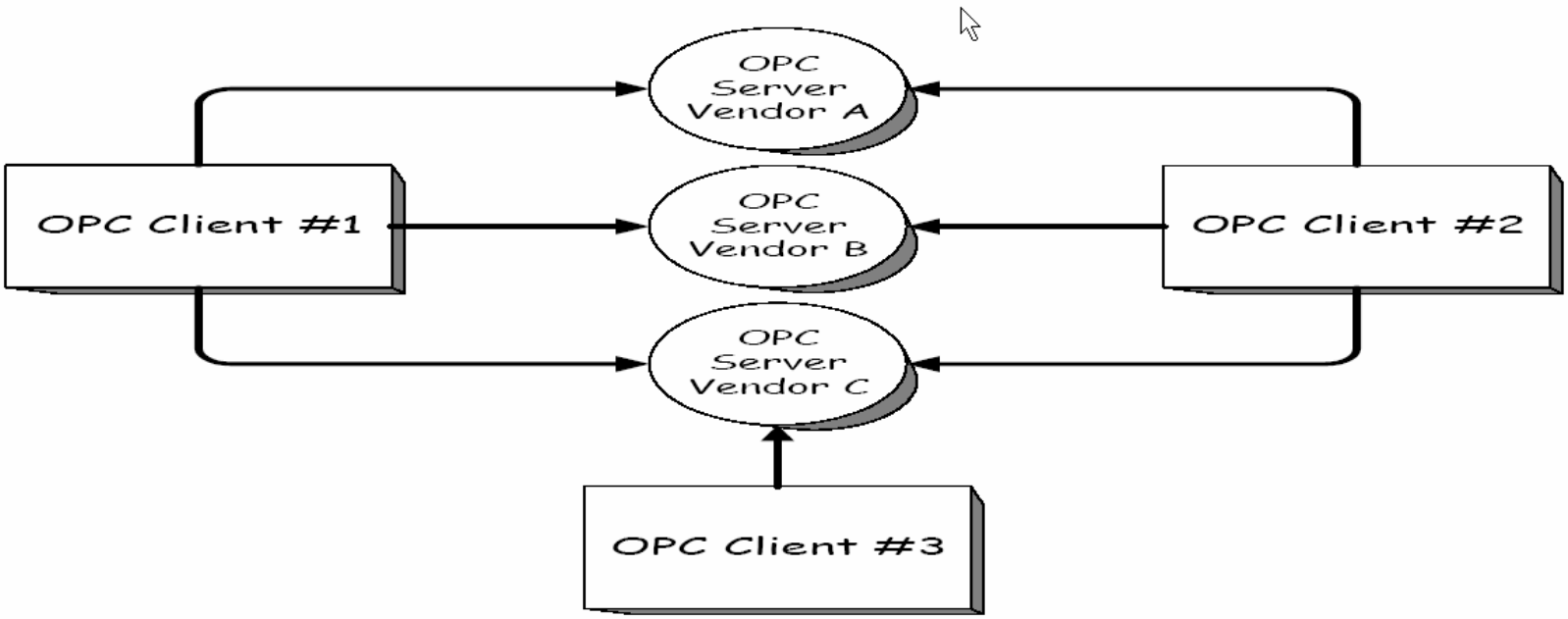
Industrial Products Hierarchy



OPC open connectivity
- via open standards

- OPC is open connectivity in industrial automation and enterprise systems.
- Interoperability is assured through the creation and maintenance of open standards specifications.
- Currently seven standards specifications completed or in development.
- Over 400 companies are OPC Members

Multi-vendor connectivity



OPC Foundation aims

- Interoperability in automation
  - Creating and maintaining open specifications
  - Standardize the communication of acquired process data, alarm and event records, historical data, and batch data
  - Multi-vendor enterprise systems and production devices.

Microsoft Involvement

- Microsoft is a member of OPC Foundation and has given strong backing to the organization.
- Microsoft acts as a technology advisor and provides previews of coming technology changes.
- Member companies with direct industry experience guide the organization's work.

OPC Markets & Applications

- Industrial Automation
  - Process industry, Manufacturing, Acquisition and Transportation of Oil, Gas and Minerals
- Production devices
  - Sensors, instruments, PLCs, RTUs, DCSs, HMIs, historians, trending subsystems, alarm subsystems, and more

OPC Certification & Interoperability

- OPC Compliance
  - Interoperability in multi-vendor systems via OPC standards
- Certification
  - Process of ensuring that applications meet the standards
  - Certification can be accomplished in many way, but require extensive people involvement

OPC Foundation

- Provides automated tools to simplify Certification
- Collectively known as the OPC Compliance tests.

OPC Interoperability Workshops

- The OPC Foundation arranges workshops hosted by member companies
- Participants can test their latest OPC devices
- Successfully tested client/server pairs are published on the OPC Foundations website

MatrikonOPC

- Matrikon - World's Largest OPC Developer
  - Clear leader in user base
  - Broad usage of OPC for end-users in industrial measurement & controls markets.

Related Links

- OPC Foundation
  http://www.opcfoundation.org/
- Matrikon OPC Exchange:
  http://blog.matrikonopc.com/
- Why do we need OPC?
  http://www.ni.com/opc/why_opc.htm
- The magic of OPC Unified Architecture
  http://ethernet.industrial-networking.com/articles/articledisplay.asp?id=1015
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