

STANDARDIZATION AND THE CORPORATION:

Or

A Study in Unintended Consequences

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OVERVIEW

- The Importance of Standards
- The Types of Standards
- The Organizations
- What Happens When...
- Conclusion

IMPORTANT CAVEATS

- This presentation represents my views, not Sun's.
- This presentation is heavily biased towards traditional Information Technology standards.
- This presentation is about voluntary, not regulatory, standardization

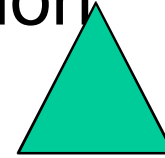
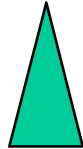
WHY WE CARE

“The noisiest of those competitive battles will be about standards. The eyes of most sane people tend to glaze over at the very mention of technical standards. But in the computer industry, new standards can be the source of enormous wealth, or the death of corporate empires. With so much at stake, standards arouse violent passions.”

Economist, 27 February 1993

IMPLICATIONS OF STANDARDIZATION

A Technical Decision



The narrow bone arrow head The fat flint arrow head



The Implications



Gatherers

Live in caves

Domesticate herbivores

Sedentary

Hunters

Live in tents

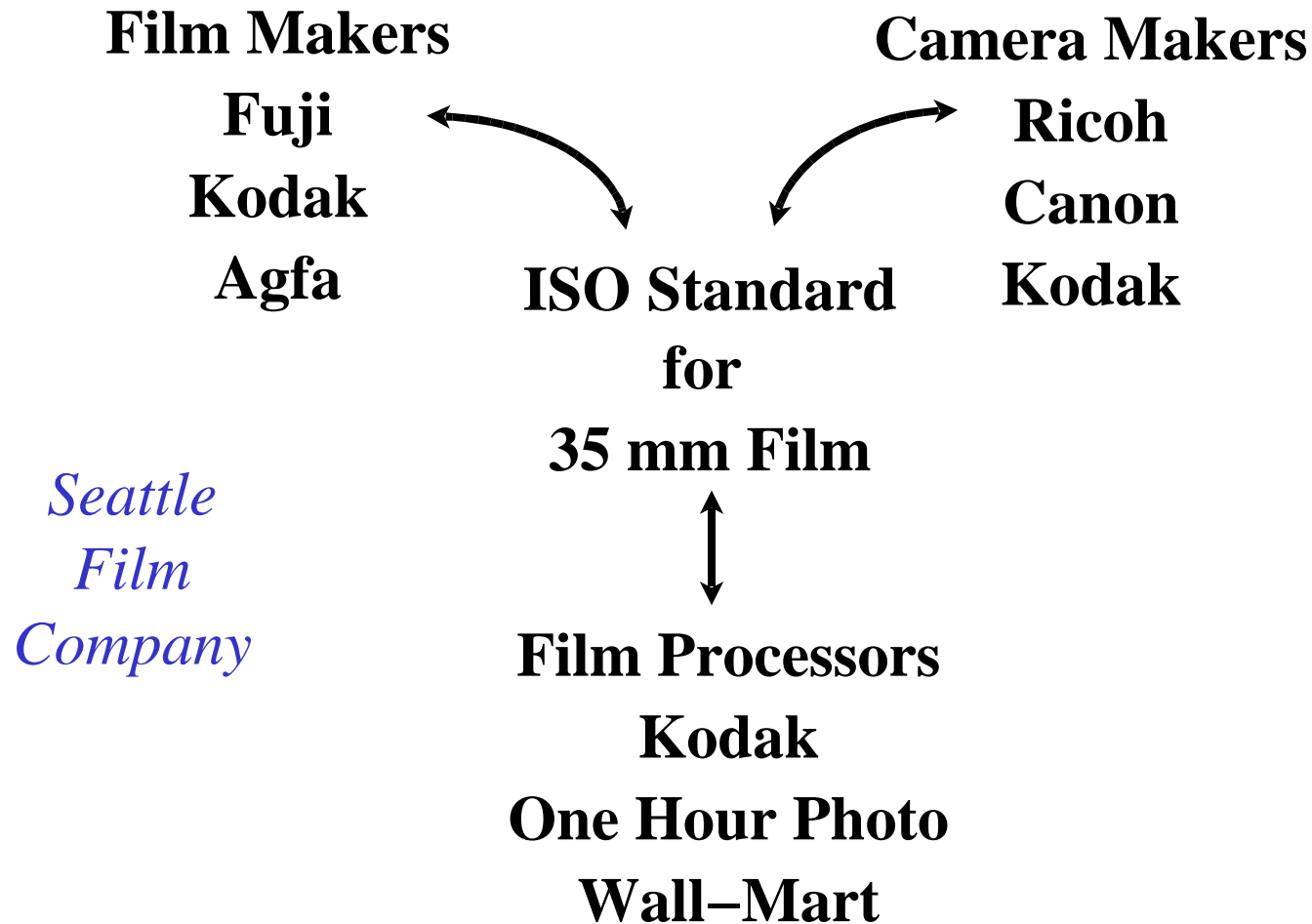
Domesticate
carnivores

Migratory

ABOUT STANDARDS

- ❑ Standards Are “Impure Public Goods”
- ❑ Types of Standards:
 - ❑ Product Safety, Environmental, Homologation
 - ❑ Legally Necessary to Sell a Product
 - ❑ Attribute Standards (Quality, Ergonomic)
 - ❑ Makes Product Attractive to Users
 - ❑ Technical Interface Standards (Java™, UNIX®)
 - ❑ Required to Meet User Business Needs
- ❑ Focus Is on Technical Interface Standards

INTERFACE STANDARDIZATION



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STANDARDS SETTING ORGANIZATIONS (SSOs)

- ❑ Five Major Types of SSOs (Process Based)
 - ❑ Trade Associations (ca. 1900)
 - ❑ National Formal Organizations (ca. 1930)
 - ❑ International Formal Organizations (ca. 1945)
 - ❑ Consortia (ca. 1985)
 - ❑ Alliances/Open Source Movement (ca. 1995)
- ❑ Responses to Industry Value Chain Needs

STANDARDS AND THE VALUE CHAIN

- ❑ Regulatory Standards Are Slow Moving
 - ❑ Slow and Careful Is Good (Nuclear Power Plants)
- ❑ Interface Standardization –Fast & Contentious
 - ❑ Used in the IT Industry
 - ❑ Interfaces Define Possible Products/Market & Sizing/Directions
- ❑ Standardization Changes With the Industry
 - ❑ Industry Now Rewards Speed of Change and the Acceptance of Innovation

STANDARDIZATION BELIEFS

- **Permits/Encourages Competition**
 - Allows Legitimate “Cooperative Competition”
 - Provides Road–map for Companies
 - Permits Innovation
- **Precludes Government Intervention**
- Acts As “Heritage Repository”
- **Standardization System Provides Structure**
- Allows Limited Immunity From Anti–Trust

STANDARDS BACKGROUND

- ❑ **User Need for Standards**
 - ❑ Second Sourcing Requirements
 - ❑ Fear of Being Orphaned/Gouged
 - ❑ Comparison Shopping
- ❑ **Users Expect Standardization**
 - ❑ Rarely Ascribe Value to Standards
 - ❑ Miss Them When They're Not There

CLASSICAL STANDARDS

- Normally, a Process Is Created to:
 - Define Need
 - Determine Technology Contribution(s)
 - Create of Group of Players
 - Identify Task
 - Standardize Technology
 - Deploy the Standard
- *Assumption Is “Rationality and People of Good Will”*

THE OPPORTUNITY

“The newest innovations, which we label information technologies, have begun to alter the manner in which we do business and create value, often in ways not readily foreseeable even five years ago.”

Alan Greenspan

Chairman, US Federal Reserve Board

STANDARDS THEORY

- ❑ **An Organizational Decision Is Made**
 - ❑ **“We Will Participate in Wireless”**
 - ❑ **Resources Are Marshaled**
 - ❑ **The Company Puts a Strategy in Place**
 - ❑ **Marketing, Engineering, Manufacturing, and Sales Coordinate Roles and Responsibilities**
 - ❑ **The Firm Succeeds by Selling Superior Implementations of the Best Technology**
- ❑ **I’ve never seen this happen**

WHAT HAPPENS WHEN

- ❑ **Standards Quest Usually Bubbles Up**
 - ❑ **Marketing Person Looking for Leverage**
 - ❑ **Sales Person Needing to Close a Sale**
 - ❑ **Engineer Looking at Neat Technology**
- ❑ **Technology Rarely Has Easy Acceptance**
 - ❑ **Standards Are Change Agents**
 - ❑ **Change Is Not Fun**
- ❑ **Right Actions, Wrong Reasons**

DECISION POINTS

- ❑ **Initial Questions, If the Decision Is “Go”:**
 - ❑ **What Resources, for How Long?**
 - ❑ **Who Has the Budget?**
 - ❑ **To Play, Observe, Slow, or Stop?**
 - ❑ **Become a Leader or Fast Follower?**
 - ❑ **Technology Insertion or Withdrawal?**
- ❑ **Usually NOT Answered Up Front**

MARKETING LED

- ❑ **Impact on All Products/Families?**
- ❑ **Emphasis of a New Standards Campaign?**
- ❑ **What Do the Users Really Want?**
- ❑ **Are Users Willing to Pay for Standards?**
- ❑ **Who Will Join You?**
 - ❑ **Unique Standards Are Really Dumb**
 - ❑ **Absent Co-conspirators, Useless Standard**

ENGINEERING LED

- ❑ **What Families/Architectures Change?**
- ❑ **What Skills Need to Be Acquired?**
- ❑ **What Are the Scheduling and or Performance Impacts?**
- ❑ **Compatibility?**
 - ❑ **All Products/Select Set?**
- ❑ **Who Has Similar/Equivalent Technology?**

A WIRELESS SCENARIO

- ❑ **Define Wireless?**
 - ❑ **Telephony or Web or Internet?**
 - ❑ **Does It Include Remote Computing?**
 - ❑ **Broadband and or Next Gen Telephony?**
 - ❑ **3GPP or 3GPP2**
 - ❑ **Create Your Own Definition and Technology?**
- ❑ **Pair With Telcos, ISPs, or Others?**
 - ❑ **Lose or Gain Customers?**
 - ❑ **Other Strategic Agreements?**

A WIRELESS SCENARIO

Geography?

- LDC or Developed Countries?

- Sales/Marketing Forces in Place?

- I18N Capability?

Regulatory Environment

- Regulatory Standards in Place? Where?

- Competition Possible?

- Influence/Implement?

A WIRELESS SCENARIO

- ❑ **What Organizations (or Roll Your Own)?**
 - ❑ **Support of Potential and Actual Allies**
 - ❑ **Inclusive or Exclusive?**
 - ❑ **Power Positions?**
 - ❑ **Structure and Decision–Making Policies**
- ❑ **Funding Models**
 - ❑ **Whoever Pays Sets the Rules**
 - ❑ **Who Stands to Win/lose?**

A WIRELESS SCENARIO

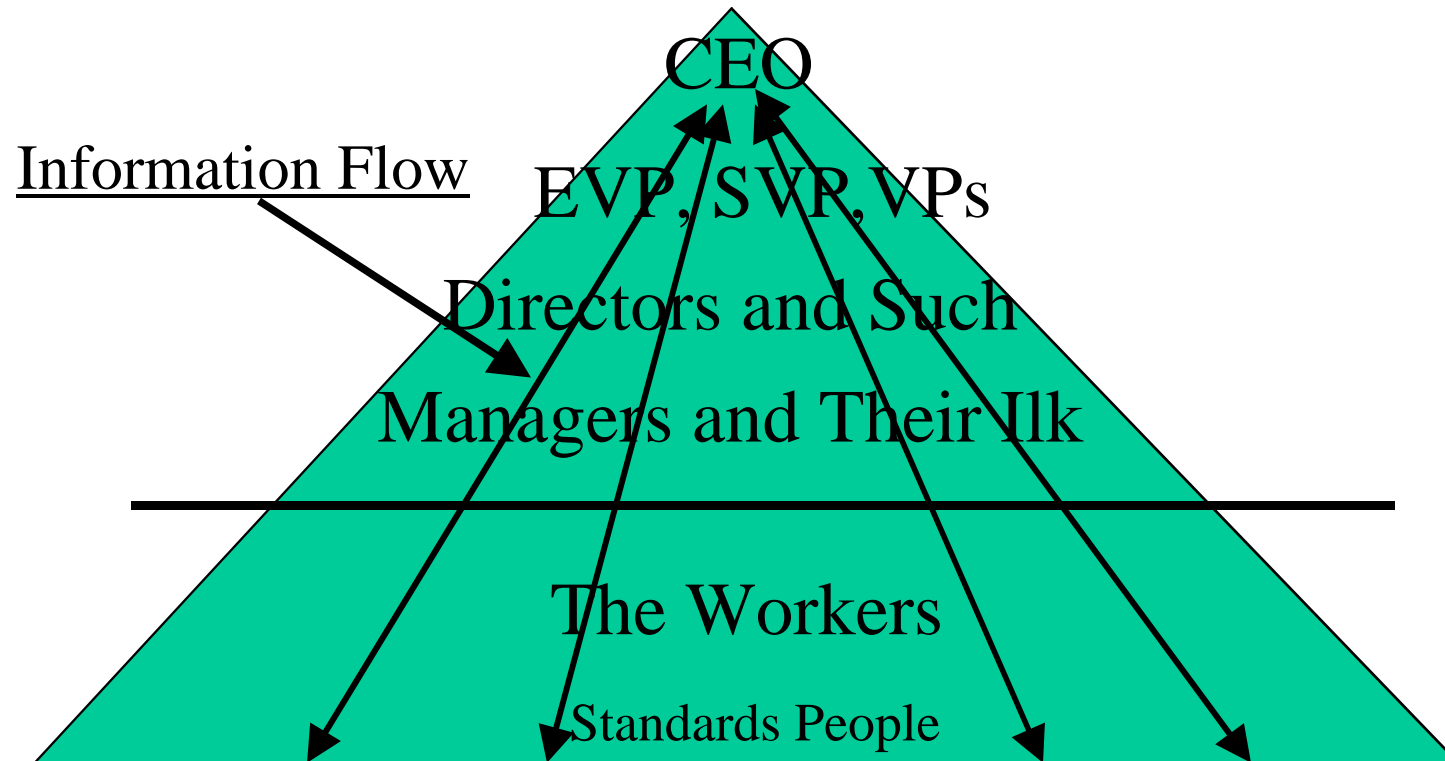
- ❑ **Define the Market:**
 - ❑ **Corporate, Consumer, Ubiquitous?**
 - ❑ **Growth, Stability, Up-Take?**
- ❑ **Business Plan**
 - ❑ **Dangers/Benefits, Proprietary/Standardized**
 - ❑ **Necessary Infrastructure or Other**
- ❑ **Other Technologies, Other Competitors**
 - ❑ **New Aggressive Competitors?**
 - ❑ **Technology Leap-Frogging?**

A WIRELESS SCENARIO

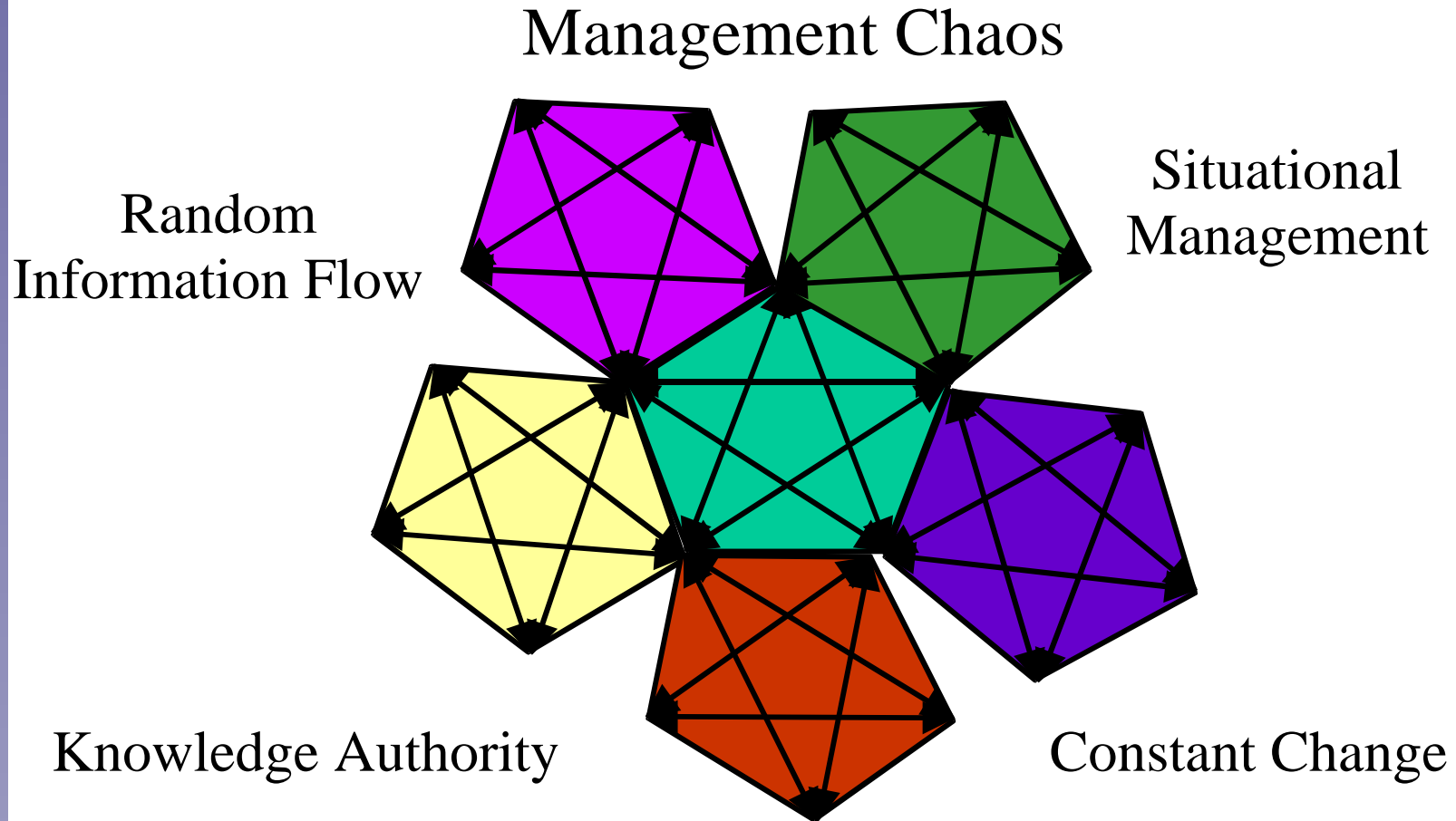
- PR and Marketing Messages
 - Contradictions With Other Messages?
 - Focus of PR Campaign?
- Sales Force
 - Compensation Schemes; Territories; Accounts
 - Field Support
 - Ordering Mechanisms
- Accounting Changes (More Shredders?)

PART OF THE PROBLEM

Olde Time Management Hierarchy



THE OTHER PART



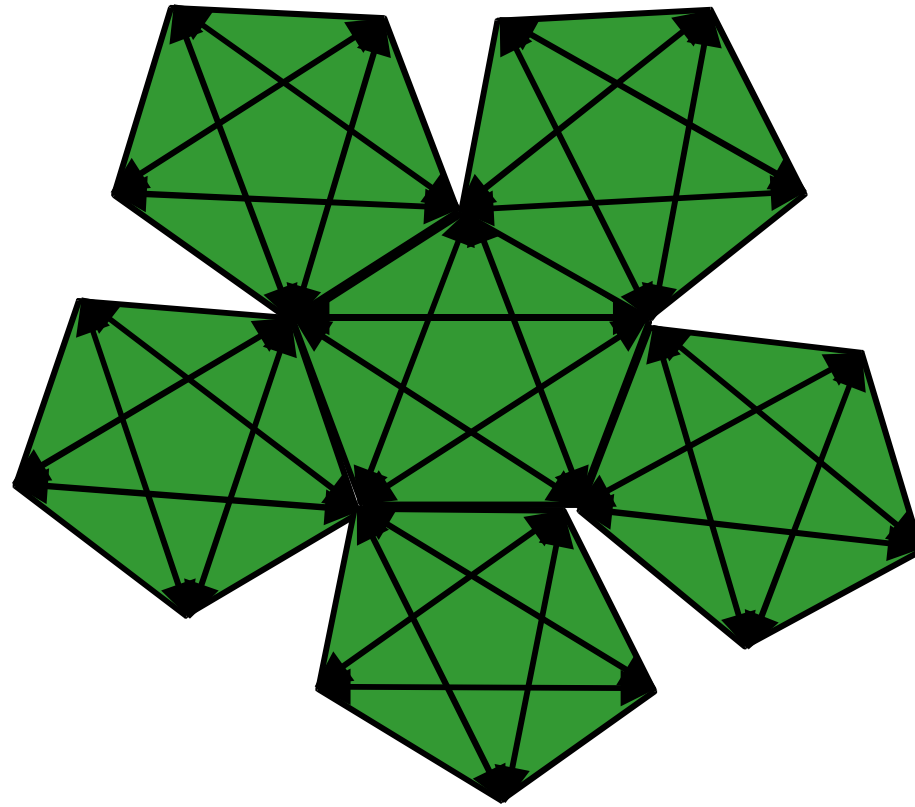
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THE GOAL

We all want to work together – really



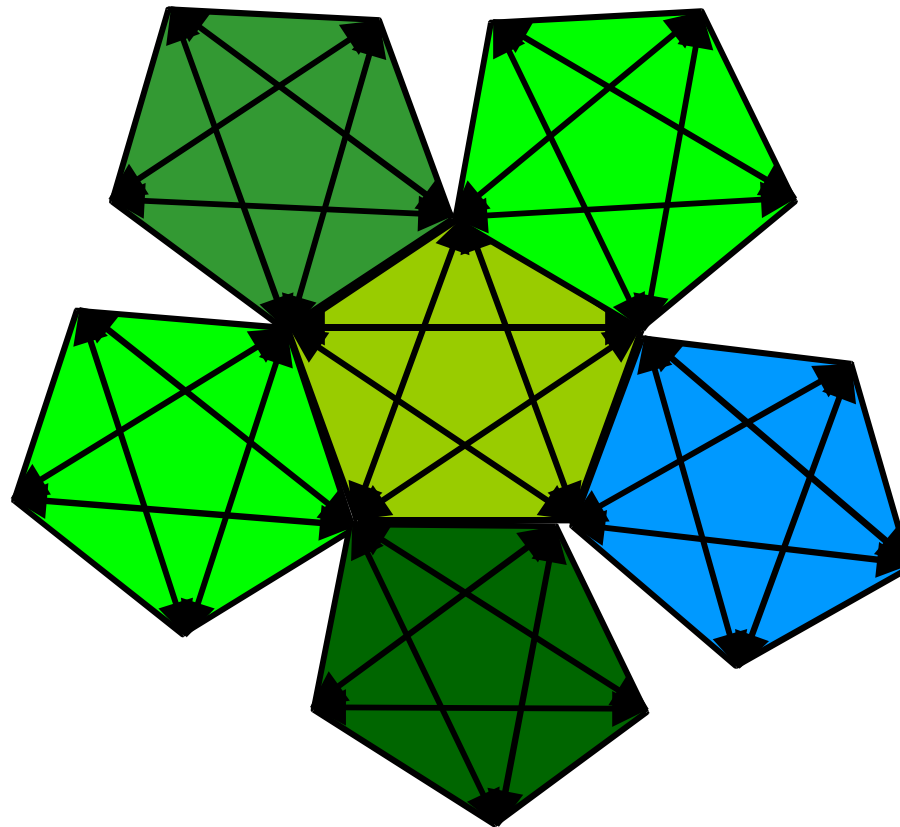
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THE REALITY

We occasionally don't fight one another – really



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FOR ANY EFFORT

- Cross Discipline Approach Necessary
 - Standardization Impacts the Entire Company
 - Legally, Politically, and “Traditionally”
- “Broad Spectrum” Approach Necessary
 - Singularity of Focus Will Lead to Failure
 - Theory of “Compensating Losses”
 - Lots of Clever People Playing
- What You Don’t Know Can Cripple You

PRACTICAL EXAMPLES

- ❑ IEEE 802 LAN Struggles
 - ❑ From ~74 to 3
 - ❑ Stabilized and created a market
- ❑ Open Systems Interconnect (OSI)
 - ❑ ~300 huge standards
 - ❑ 10 years of effort
- ❑ EDIFACT vs. EDI
- ❑ ECMAScript (a.k.a. JavaScript™)
 - ❑ Deployed and Stabilized

PRACTICAL EXAMPLES

- W3C
 - HTTP (IETF) and HTML
 - XML (and a bazillion consortia)
- Active Group
 - (Active X's trial)
- ECMA 234

POSSIBLE CONCLUSIONS

- Standardization Is Becoming More Prevalent
 - More and More Initiatives Are “Standards Based”
 - Seems to Be a Popular Concept
 - Focuses on Interoperability
- Needs a Disciplined Approach
 - Block of Jell-O School of Management
 - Singularity Is Necessary, but Not Sufficient

A CONCLUDING THOUGHT

It is not enough that you should understand about applied science. Concern for the man himself and his fate must always form the chief interest of all technical endeavors; concern for the great unsolved problems of the organization of labor and the distribution of goods in order that the creations of our minds shall be a blessing and not a curse.”

Albert Einstein