

Why XML? Why Now?



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Introduction

- Business Environment and Information Strategies
- Motorola Computer Group Experience
- Markup Solutions
- Industry Resources
- Why XML? Why Now?

Business Environment

- Productivity
- Outsourcing
- Supply chain convergence

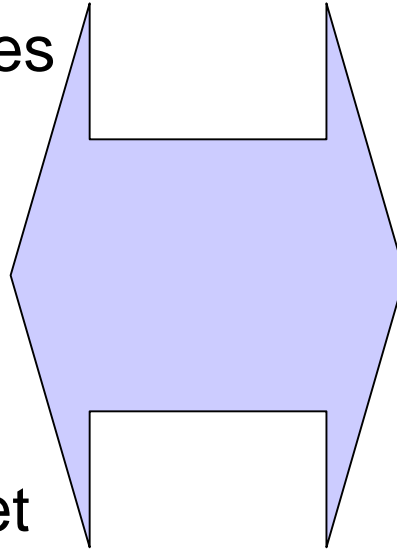
Information Strategies

- Re-use – write once, use many
- Re-purposing – single source, multiple outputs
- Interchange – sharing source, collaboration
- Quality – enforcing structural consistency
- Search – navigation, specific search

Choosing a Strategy to Fit Your Needs

Factors

- Number of deliverables
- Content overlap
- Delivery methods
- Team collaboration
- Information sources
- Size of information set
- Audience diversity
- Frequency of changes



Strategies

- Re-use
- Re-purposing
- Interchange
- Quality
- Search

Motorola Computer Group Experience

- SGML
- XML
- Future directions

Technical Information Environment

Sales Cycle



Information Customers



Information Sources

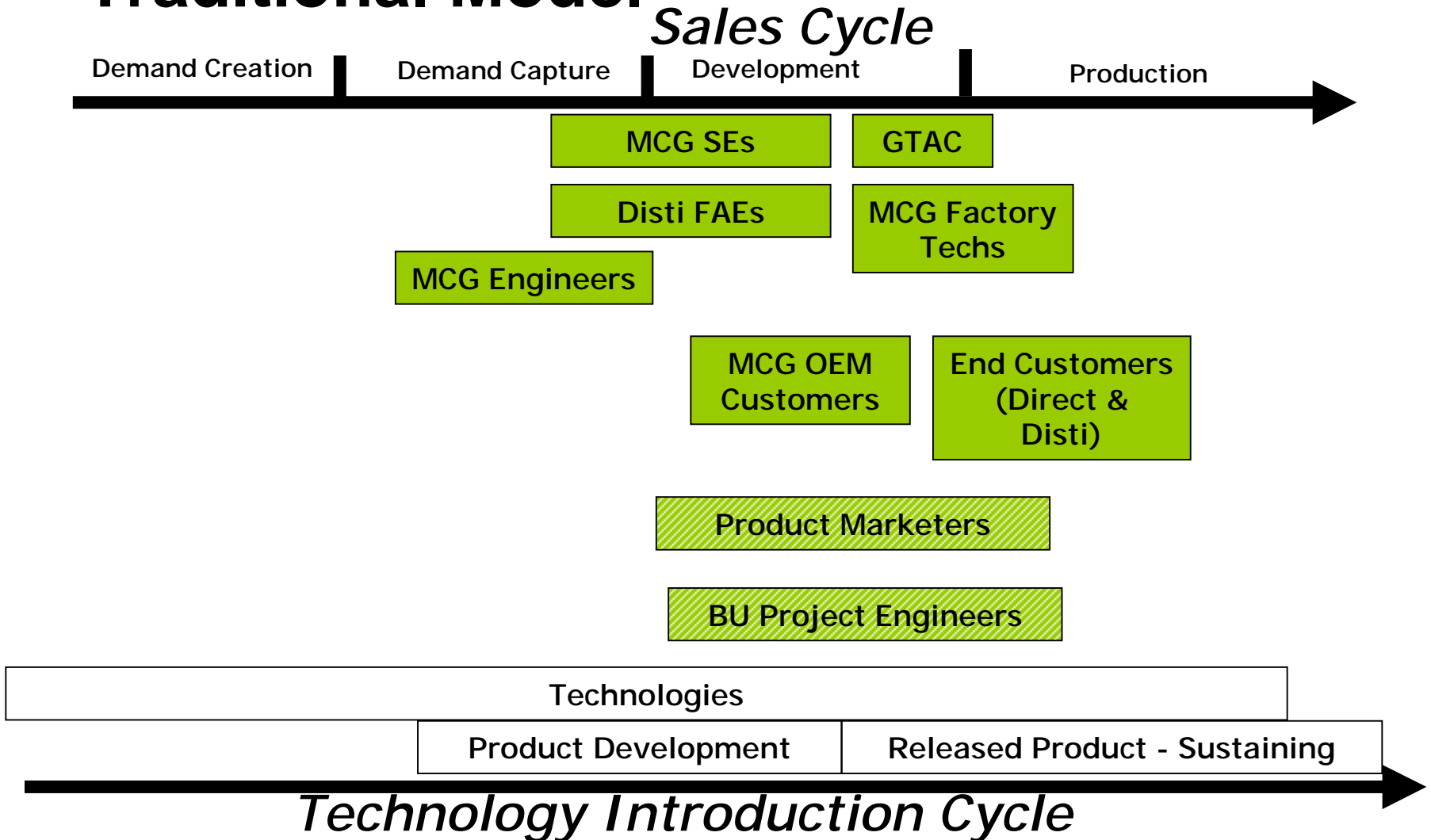
Technologies

Product Development

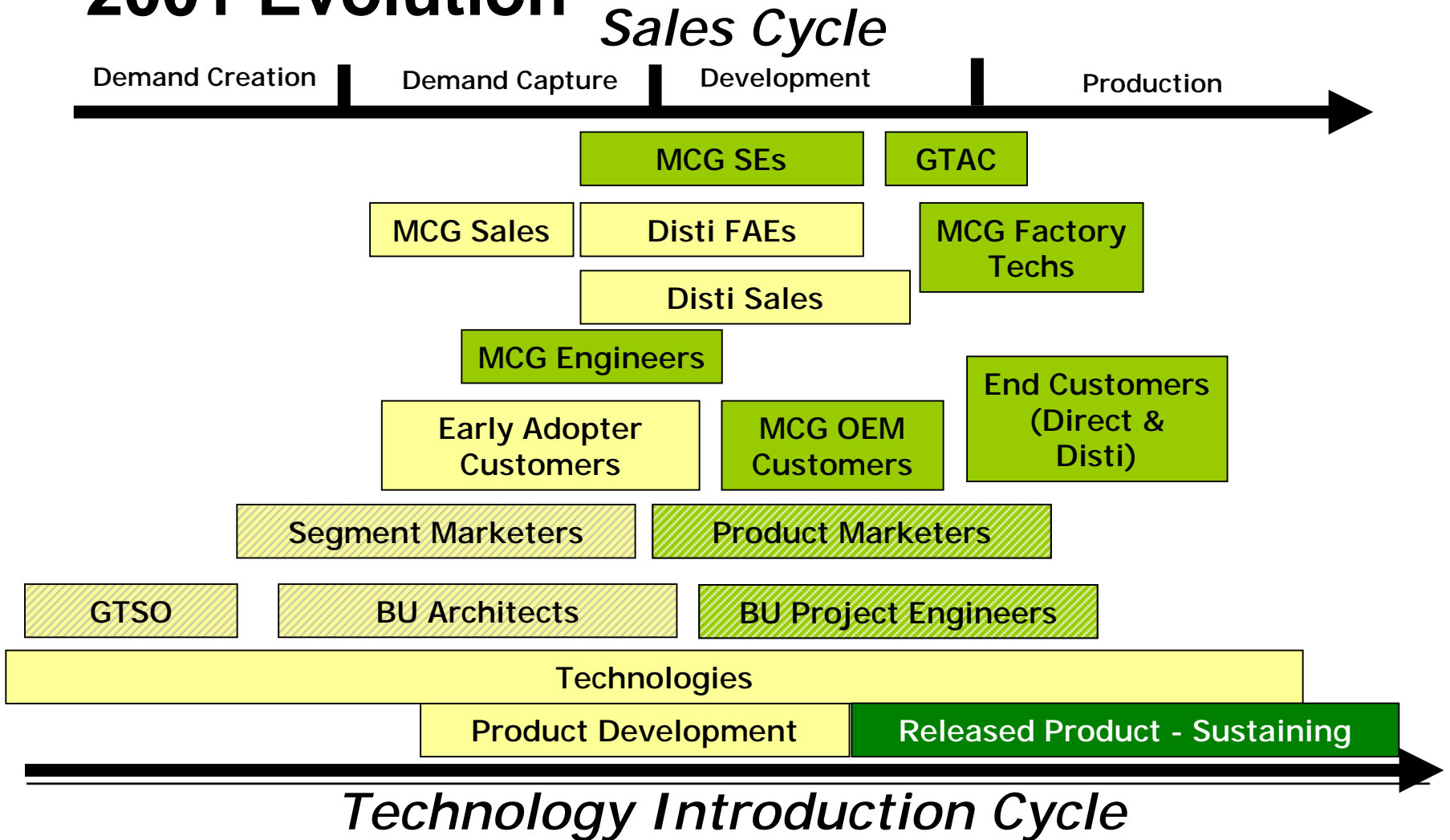
Released Product - Sustaining

Technology Introduction Cycle

Information Development & Delivery – Traditional Model



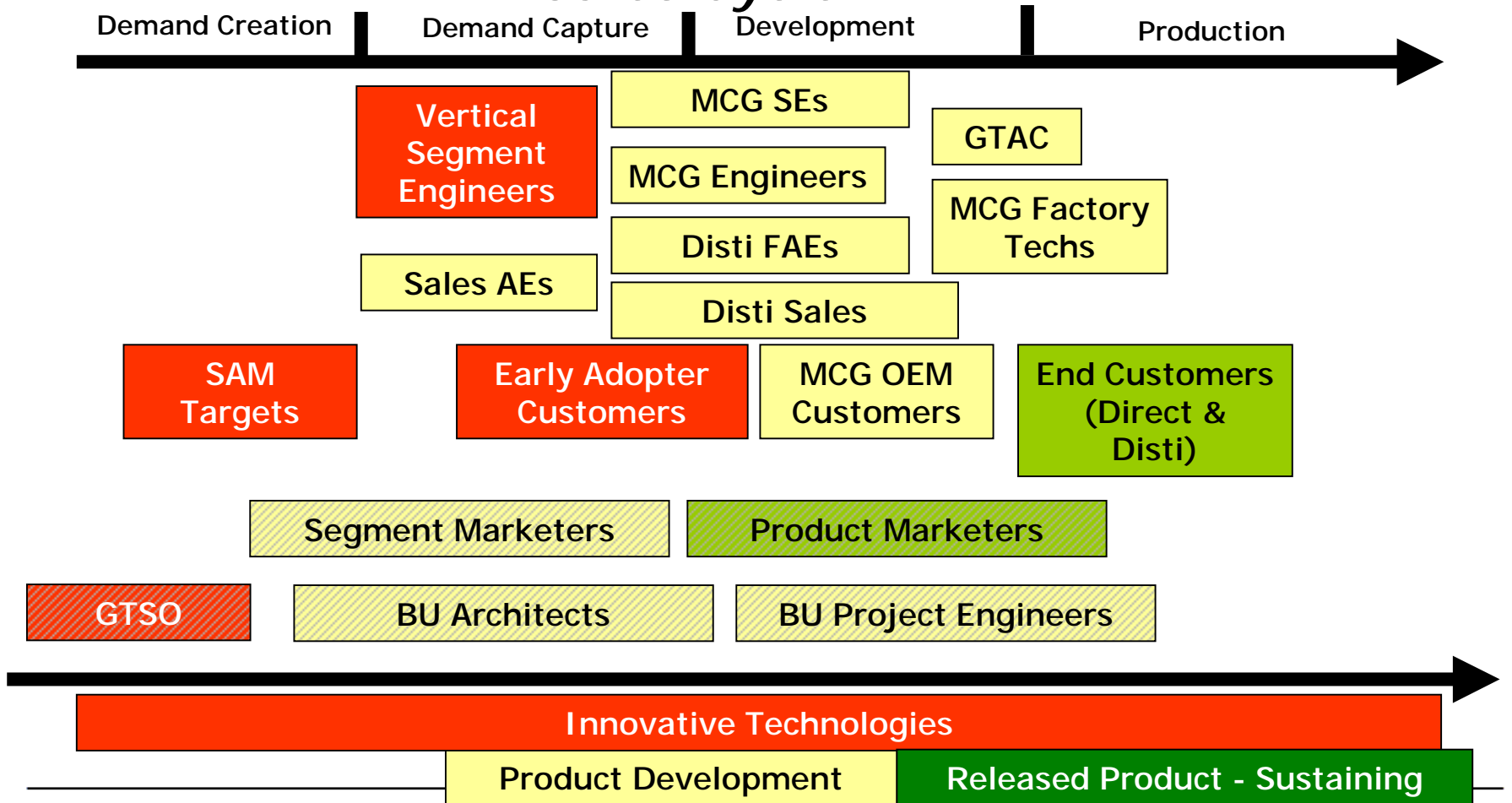
Information Development & Delivery – 2001 Evolution



Information Development & Delivery

Technical Innovation Model

Sales Cycle



Technology Introduction Cycle

Implications of Technology Innovation Model

- Overall expansion of role and opportunity
- New audiences / New information types
- Greater than ever need for collaboration and knowledge management

Tupperware Targets

- Technology adoption information: high-level functionality, segment requirements and applications, architectural design
- Early adopter and new customer information: in-depth architectural design info, engineering specs, early access to modules of “release-level” information such as programming info or application interface info
- Customer development information (MCG standard released products): programming, application interfaces, device driver writing
- Release cycle information: installation, user, administration, troubleshooting
- Long-term support information: compatibility, changes, replacements, migration

Descriptive Markup v. Procedural Markup

- Appearance of text upon output
- Description of purpose of text

42

<Bold>42</Bold>

```
<HTML>
<head>
  <title>ANSWER</title>
</head>
<body>
  <Paragraph>
    <Bold>42</Bold>
  </Paragraph>
</body>
</HTML>
```

<query>

<question

attribute:quality=Ultimate;

attribute:scope=Life;

attribute:scope=Universe;

attribute:scope=Everything/>

<answer attribute:type=Integer>

42

</answer>

</query>

Everything You Always Wanted to Know

By Somebody Smarter than Me

Chapter 1. General Information

Chapter 2. Around the House

Chapter 3. In the Yard

Section 1. Why does the grass die?

Section 2. Why do the flowers die?

Section 3. Why does the neighbor's yard
look so good?

Chapter 4. Down the Street

```
<Book>
  <title>Everything You ...
  <Chapter>
    <Section>
      Words ...
    </Section>
    <Section>
      Words ...
    </Section>
  </Chapter>
  ...
</Book>
```

```
<Purchase Order>
  <PO Number>
    4455678
  </PO_Number>
  <Line>
    <Part_Number>
      AB235-890
    </Part_Number>
    <Quantity>
      100
    </Quantity>
  </Line>
  ...
</Purchase Order>
```

Advantages of Descriptive Markup and XML

- Presenting information in different formats
- Managing information through external or internal metadata
- Interchange, interchange, interchange
- Consistent structure: blocking and tagging
- Search cues

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Interchange Basics of XML

- Open and public
 - Quite well documented
 - Not prone to arbitrary change or withdrawal
 - Neutral with respect to computing resources
- Designed for interchange, not just presentation
- (optional) DTD and Schema
- XML instances as process documents (inter-process messages, for example)
- Bigger than binary. Who cares?
- It's extensible to support specific requirements

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Extensible

<something>This is an instance</something>

Extensible

<something>This is an instance</something>

<something>
 <firstword>This</firstword>
 is an instance.
</something>

Dialects, etc.

- RosettaNet – eBusiness processes
- ebXML – business messages
- finXML – finance and capital
- Lots more

Why Now?

- XML is much 'lighter' than earlier solutions (SGML).
- Extensibility makes it very flexible
- The world is catching on
 - Microsoft Word, Adobe FrameMaker - current
 - Oracle is marketing its current and next-generation database managers as XML capable.
 - Browsers
 - Application interfaces (e.g., Excel)
- Not just a document markup

SOAP

- Simple Object Access Protocol
- A protocol for invoking methods on objects.
- A packaged message with a descriptive header, a request and some data.
- Passed as HTTP

XPATH

- Navigation within an XML instance
- Follows the tree structure: children (descendants), parents, siblings
- Can resolve node content, name, and/or attributes
- Basic: Return list of elements with given characteristics (e.g., all children with a given attribute set to a given value)

XSL/XSLT

- Extensible Stylesheet Language/Transform
- Describes presentation stylesheets
- Transforms change one XML tree into another (transform elements and structure)
- Based on XPATH

XQUERY

- A query language for use on collections of XML instances
- Based on XPATH
- Designed to be efficient for both 'XML as document' (ala' SGML text databases) and 'XML as data' (more recent application-type implementations)

WSDL

- Web Services Description Language
- “WSDL is an XML format for describing network services as a set of endpoints operating on messages containing either document-oriented or procedure-oriented information.” (W3C)
- “What’s the weather in Portland, OR?”

UDDI

- Universal Description Discovery and Integration
- “The [UDDI] project creates a platform-independent, open framework for describing services, discovering businesses, and integrating business services using the Internet, as well as an operational registry that is available today.” (UDDI.org)
- “Find the weather in Portland, OR. If it’s nice, get a flight and rent a car for this afternoon.”

'Free' Tools

- Apache Project
 - XERCES parser
 - XALAN XSLT processor
 - Cocoon – very cool single input, multiple output form capability
 - SOAP
 - Lots more
- Source Forge
 - SAXON XSLT processor
 - Lots more

Implementation Realities

There is no telepathic software!

- Business needs analysis
 - Target selection
 - Audience analysis
 - Information analysis
-
- Investment in tools & training

Spreading Capability

- HTML is no great technological shakes –
BUT IT MADE ACCESS TO WORLDWIDE INFORMATION STORES UBIQUITOUS.
- XML is, likewise, no big technological deal
BUT IT PROMISES TO MAKE ACCESS TO WORLDWIDE PROCESS RESOURCES UBIQUITOUS.

As information-intensive services and processes become widely available, the underlying information must be easily accessible using common tools.

It will not be acceptable to impose a unique format or proprietary tools on consumers merely to handle 'your' information.

Resources

- <http://xml.apache.org/>
- <http://www.xml.com/> (O'Reilly; see especially the FAQ)
- <http://xml.coverpages.org>
- <http://www.uddi.org>
- <http://sourceforge.net/>

Summary - Why XML?

- Promotes multiple information strategies
- Ease of implementation compared to prior solutions
- Industry acceptance / growth in resources

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