Joe Speed | Connectivity Sales Leader | Worldwide

2011 May 26 | Greg Kliewer | Connectivity Architect | Canada and the Caribbean

IBM

Bridging from File Transfer to Real Time
IBM gives you a path for moving your business forward

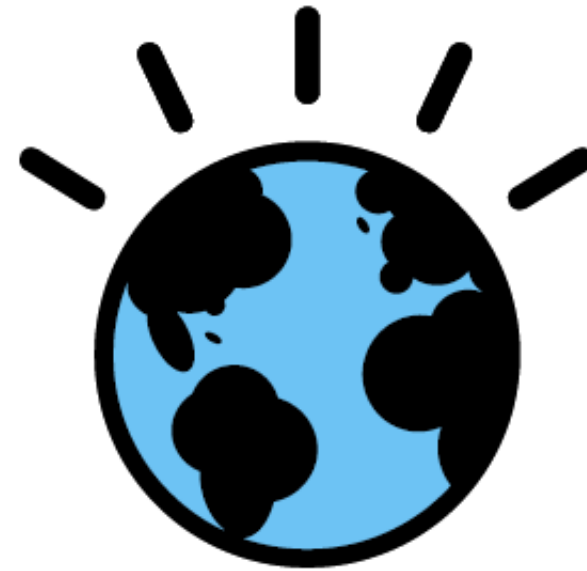# Agenda

Sterling owns MFT

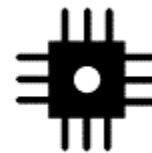ESBs extend to real time

Appliances extend reach

Bus 2.0: the Hybrid Bus

How to learn more

Appendices

making your bedrock integration solutions even smarter

Agenda
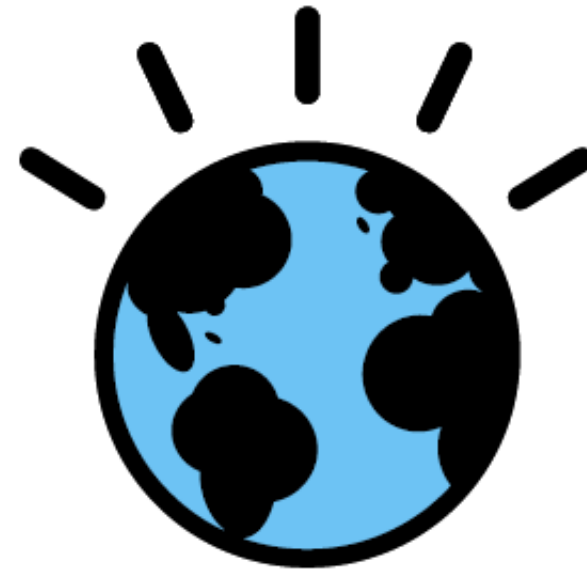
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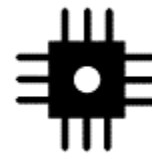ESBs extend to real time

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Sterling Commerce leads the way in file-based, batch-oriented integration for decades

Sterling Commerce

SOFTWAREmag.com

2008 Supply-Demand-Chain Executive **100**

2008 INBOUND LOGISTICS **Top 100** LOGISTICS IT COMPANIES

Food Logistics

MANAGING AUTOMATION PRESENTS THE **PM100 AWARDS 2010**

SUPPLYCHAINBRAIN

- Founded in 1981

- Headquartered in Columbus, OH, USA

- 2,500 employees worldwide

- More than 18,000 customers worldwide

- Leading solutions for Managed File Transfer (MFT) in many contexts:
  - ✓ Intra-enterprise
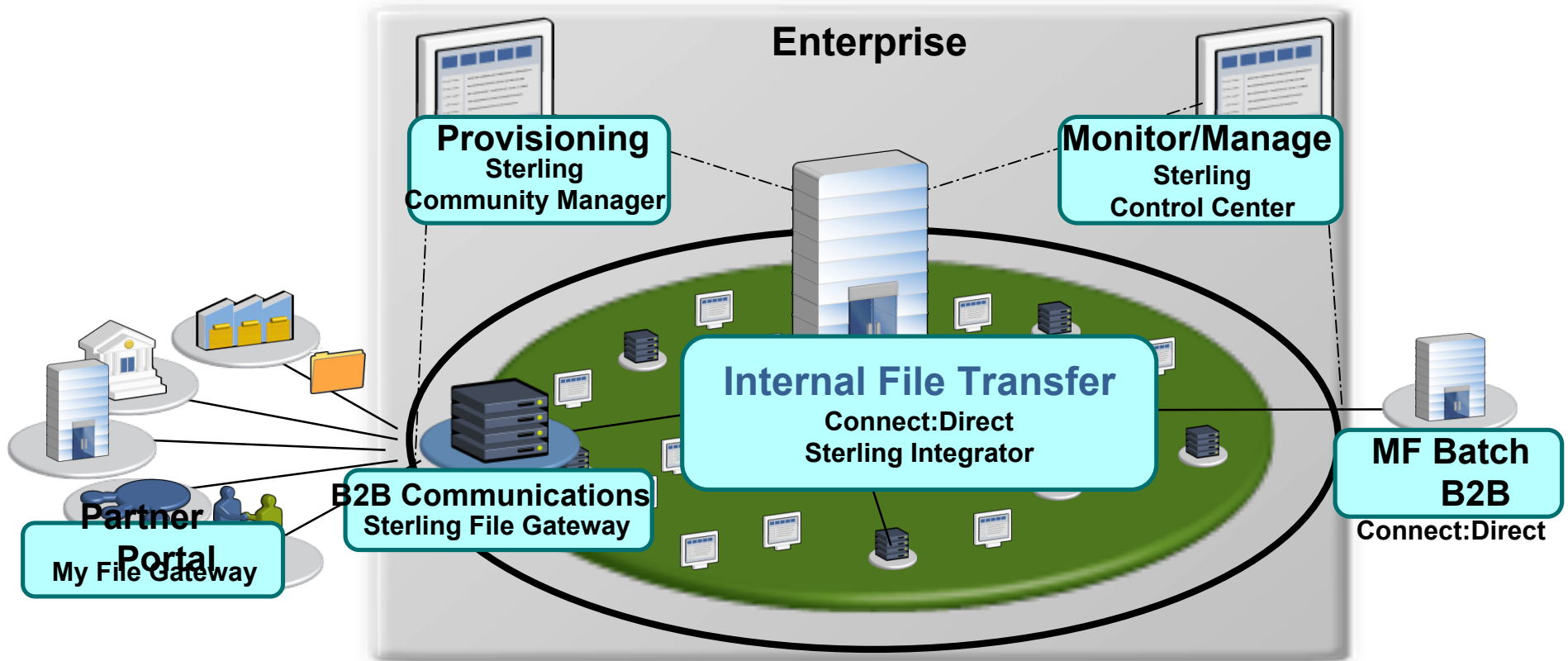 - ✓ B2B
  - ✓ IaaS and VAN

So IBM bought the company...
Because it was such a big fan ☺

- This is a recognized strength of IBM's solution-building strategy – when a competitor is well out in front of you, better to buy and integrate, rather then attempt to duplicate and catch up
    - IBM does this very well (relative to other large competitors)

Sterling products are now the *cornerstone* of IBM's MFT strategy…

Enterprise

Provisioning
Sterling
Community Manager

Monitor/Manage
Sterling
Control Center

Internal File Transfer
Connect:Direct
Sterling Integrator

B2B Communications
Sterling File Gateway

Partner Portal
My File Gateway

MF Batch B2B
Connect:Direct

Sterling Managed File Transfer Suite
An architectural approach providing security and governance of data movement throughout the enterprise and with external business relationships

→

- *Best practice security capabilities to protect customer data and comply with regulations*
- *Single repository for all file transfer activity*
- *End-to-end visibility for all data exchanges*
- *Central proactive monitoring resulting in quicker identification and remediation of problems*

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The Sterling Commerce product set will continue to provide value for Managed File Transfer solutions

- Providing a single, centralized platform to set up, maintain, and administer all file transfers

- Adding qualities of service absent in point-to-point solutions:
  - Proactive alerting for missing or late transmissions
  - Guaranteed delivery
  - Scheduling

- Reducing the time and effort required to:
  - Setup new transfers
  - Make ad hoc changes and exceptions
  - Track down transmission problems

- Managing partner relationships
  - Rapid onboarding
  - Service-level agreements

> It's about reducing the drain on your IT budgets attributable to operating hundreds or more of p2p file transfers

IT Budget

$27 New

$73 Maintain
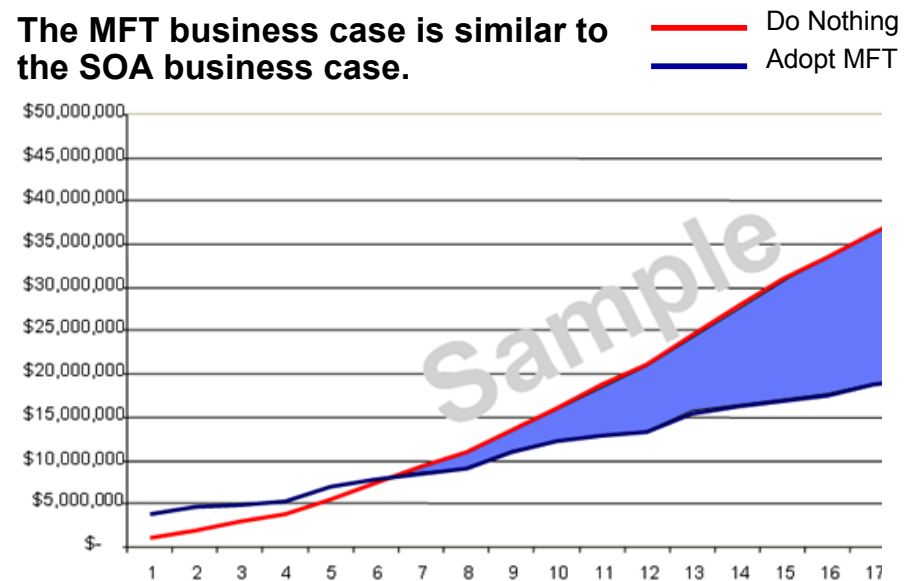
The conundrum facing CIOs:

How to get more for less when…

- Fixed costs of maintaining existing systems consume IT budgets
- Limited opportunities for new value-adding investments
- Every new investment creates additional maintenance costs

Source: Boston Consulting Group

The MFT business case is similar to the SOA business case.

— Do Nothing
— Adopt MFT

7

BUT our businesses want things that are difficult to do in batch mode!

My analyst just produced a report that said if we can get the techs out to the field the same day the terminal breaks down, we can save 3 million a year on maintenance!

I'm telling you, we are losing A LOT of customers because Mr. Competitor offers realtime re-booking on iPhones but our customers have to call in here and then *wait to the next day* for confirmation :(

Just maintaining our in house CRM is dragging half the development team away from projects! Does anyone have that SalesForce.com guy's number?!

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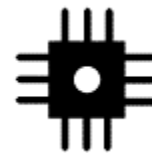
Poll Question #1

- My file exchanges are:
    - Daily
    - Hourly
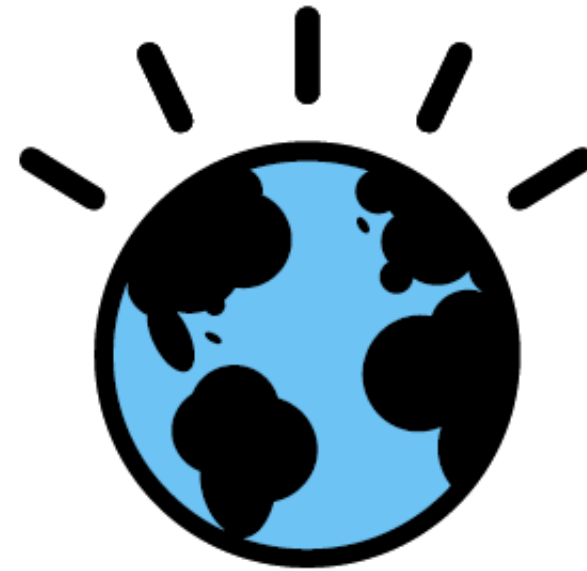   - Many per second

IBM built dominance in SOA before acquiring Sterling Commerce

Worldwide Services Oriented Architecture (SOA)
Shipments Market Share Dollars 2009

2009 Total: $3.5 Billion

Other 3%
Sybase .2%
Progress Software 3%
Vitria .01%
Microsoft 5%
SoftwareAG/
webMethods 4%
Tibco 5%
Oracle/BEA 5%

IBM 75%
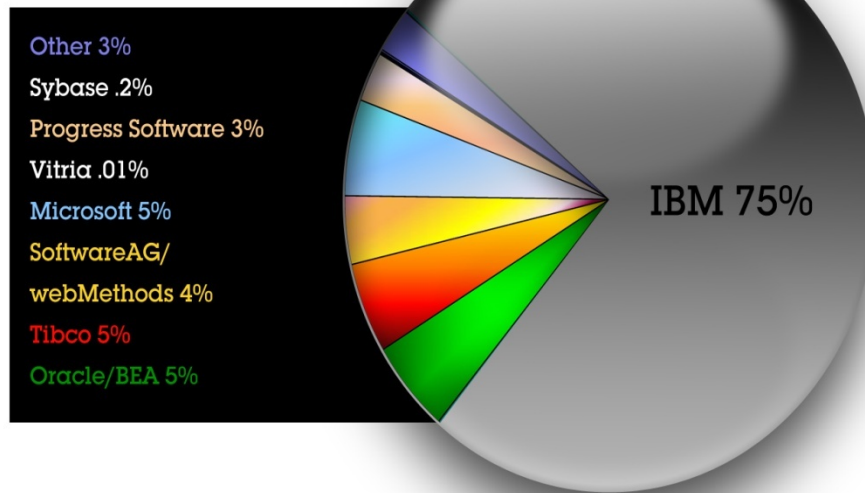
- IBM's sales of SOA products and services have eclipsed those of its nearest competitors, Oracle/BEA/Sun and TIBCO

- This is due in large part to IBM's leadership in driving innovation in the space

" IBM ESBs have the broadest set of supported run-time protocols, connectivity options, mediation capabilities, security, commercial data standards, and service monitoring and management, hands down. "

- Gartner

The *Enterprise Service Bus* is at the heart of service orientation

Intelligently routes based on message content or transport headers

Connects everything to everything

ESB

Transforms between different message formats

Bridges between different transport protocols

Development Services

Interaction Services

Process Services

Information Services

Management Services

Enterprise Service Bus

Partner Services

Business Application Services

Access Services

Asset and Registry Services

Infrastructure Services

Lifecycle Services

An ESB is architecturally pretty simple
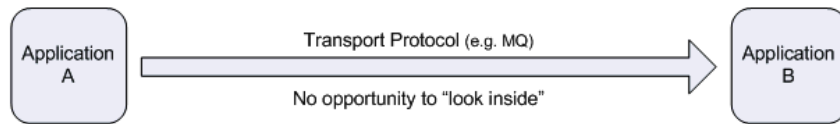
Application A → Transport Protocol (e.g. MQ) / No opportunity to "look inside" → Application B

- Point-to-point communications use protocols that are agnostic as to the content of the message traversing the connection
- ESBs are fundamentally reverse proxies, which puts them in the position to do work in between the terminated connection and the new connection to the target application

Application A → Transport Protocol (e.g. HTTP) → Terminate → Do some work → Connect → Transport Protocol (e.g. MQ) → Application B

Routing

ESB — Mediation — Delivery

Protocol Bridging

Transformation
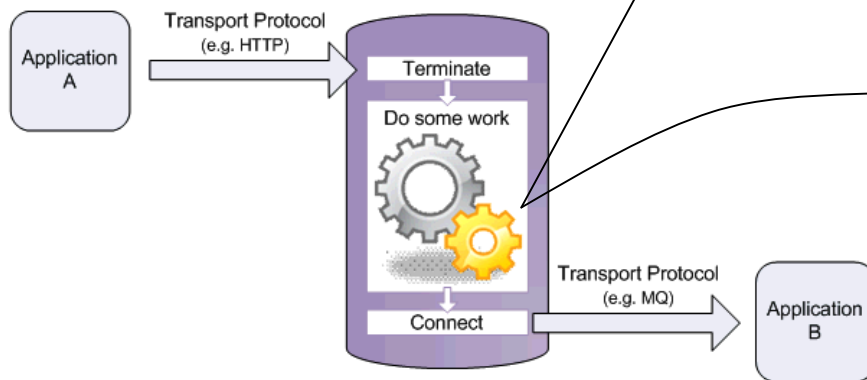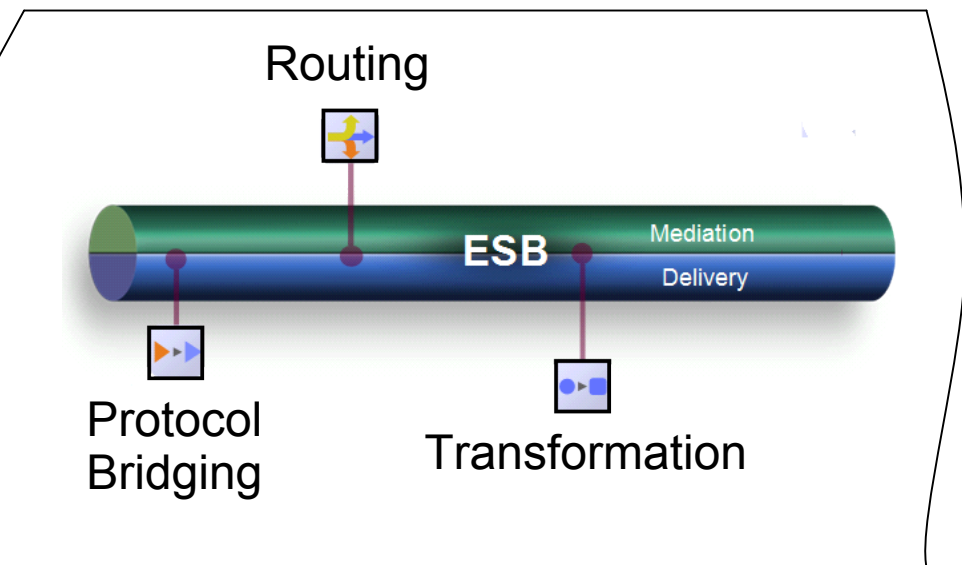
Doing simple things well has a BIG impact on the cost of doing business

IT Budget
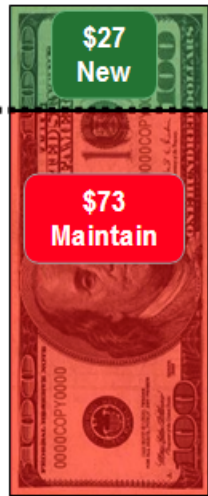
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$73 Maintain

The conundrum facing CIOs:

How to get more for less when…

- Fixed costs of maintaining existing systems consume IT budgets

- Limited opportunities for new value-adding investments

- Every new investment creates additional maintenance costs

Source: Boston Consulting Group

Returns are based on reducing the cost to build and maintain solutions.

— Do Nothing
— Adopt SOA
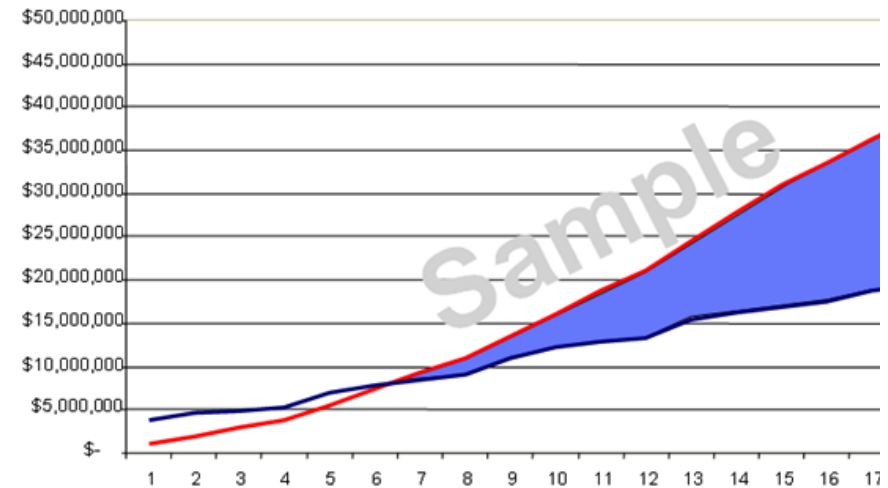
- Most organizations apply returns back to the project budget
- This is in large part meant by "SOA increases business agility" – after a short period of time recovering initial investments, SOA shops are able to devote more of their resources to delivering new functionality to the business
- IBM can help you make the business case for bringing in technologies needed to realize an SOA vision

Inventory of Existing Services
Assuming steady-state funding

☐ succes ☐ failure

ESB

P2P

2011 2012 2013 2014 2015
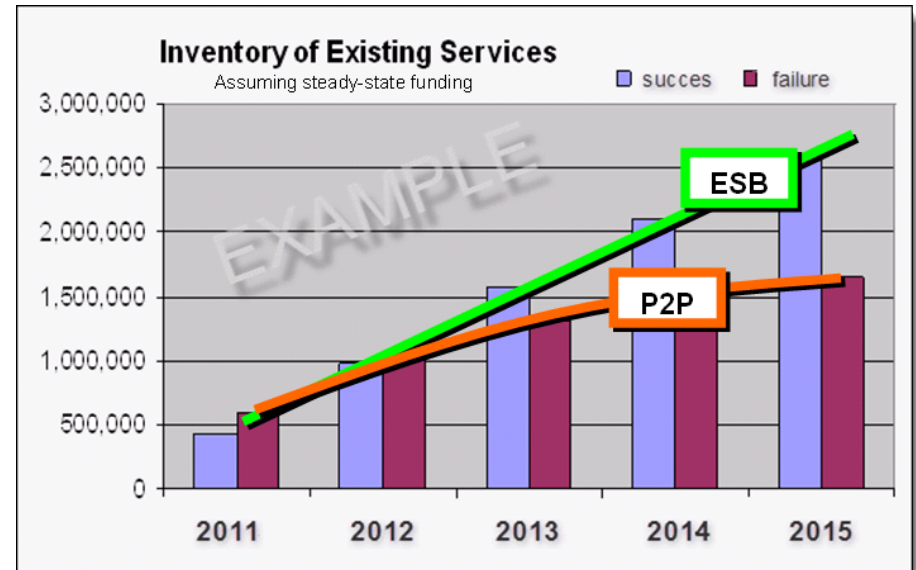
How *Amalgamated Waste Management** used an ESB to accelerate its growth and reduce its operating costs…

WITHOUT major changes to its existing AS/400 (System i) systems

| The business path was clear...	But the obstacles seemed great...

■ Strategy to grow by *acquisition:*
  – Increase market share
  – Put pressure on larger competition
	■ First acquisition ran up a bill for systems integration that was wholly unacceptable

■ Strategy to focus on *core business:*
  – Reducing the number to pick-ups (by ensuring trucks do not call on empty bins)
  – Outsourcing / cloud-sourcing systems aren't keeping the truck humming and the plants processing
	■ Cloud vendors identified
	■ Negotiations under way
	■ Virtual panic at the realization that cloud vendors' systems wanted to "talk" in real time and some people thought it might be cheaper to throw out all of the core, trucks-and-plants systems and buy brand new ones to integrate with their cloud-sourcers

"Amalgamated Waste Management" is to the best of IBM's knowledge NOT a registered business name for any company inside or outside of the United States of America. The name was chosen specifically because it was not found in searches. The Amalgamated Waste Management discussed here and in following slides is a fictional entity, with business drivers and technology challenges representative of typical IBM customers. The technology context and solutions described have been inspired by those found at a set of real-world customers, but have not been drawn from any one in particular. Any correlation to any real-world companies is purely coincidental.

All was not doom and gloom...
Amalgamated Waste Management already had *Sterling Integrator*

- A program to "solve the hairball" of point-to-point FTP connections between RPG-based apps and other systems on the AS/400 was well under way and showing positive returns after only a year
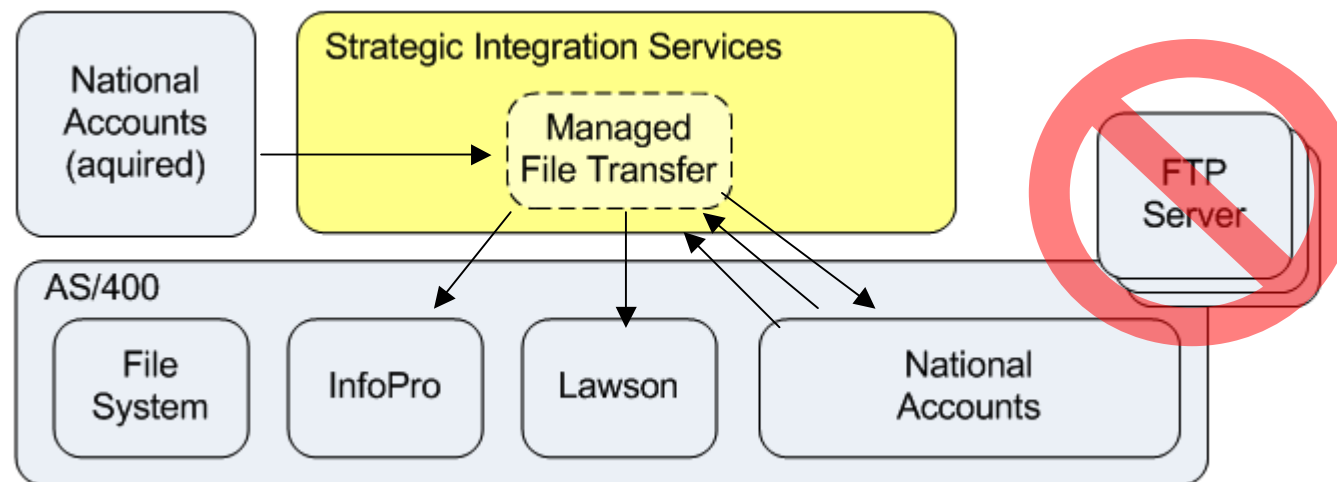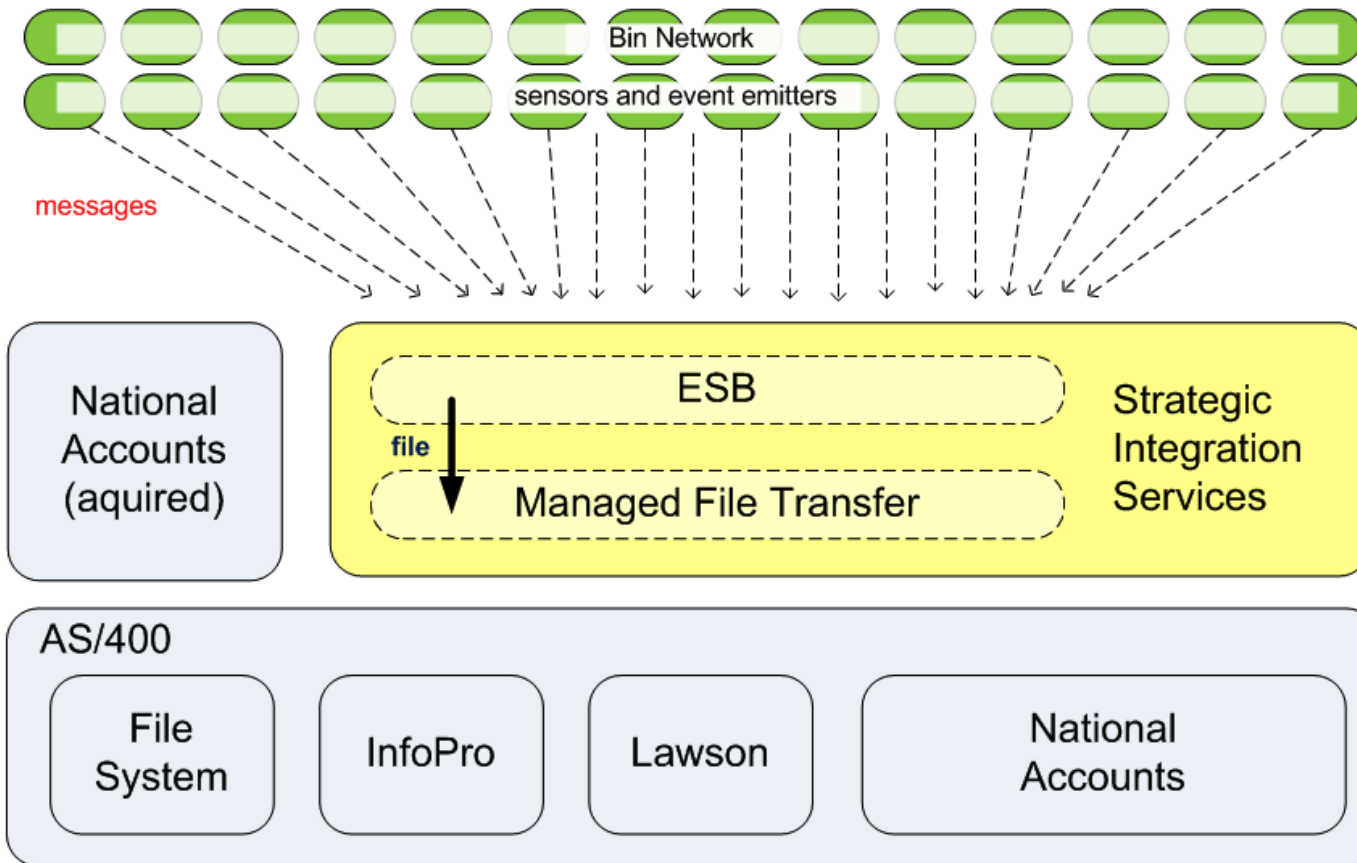
The new bin network and cloud-sourcing initiative added requirements for *real time messaging*

- IT recognized that this was not a one-of-a-kind situation
- In general, they expected to continue see more requirements for *situational awareness:*
  - Smart bins
  - Customer satisfaction through fast, proactive equipment maintenance and replacement
  - Customer demands for online access to their account and billing data

- Also, IT understood that its in-house expertise for building, operating, maintaining, and drawing value from real time messaging solutions was very limited:
  - What do we do with "messages" that come in from the bins the moment they happen?
  - How do we get them into our backend systems, like batch?
  - Do we have to completely overhaul our back-end systems to make them work with new bin sensors?
  - Do we have to rip them out and replace them?

The solution was to add an IBM ESB

- Events fall like rain from the new network of sensors, but does not mean anything to the batch-oriented applications, nor the existing MFT solution
- In fact, the ESB is able to make itself look like just another batch-oriented app to the inside world by collecting messages together into files (by size or duration) before sending them along

Bin Network

sensors and event emitters

messages

National Accounts (aquired)

ESB

file

Managed File Transfer

Strategic Integration Services

AS/400

File System

InfoPro

Lawson

National Accounts

- The same thing works in reverse; applications are able to send batches of updates to the ESB, which it then transforms into messages back to the devices in the field (future)
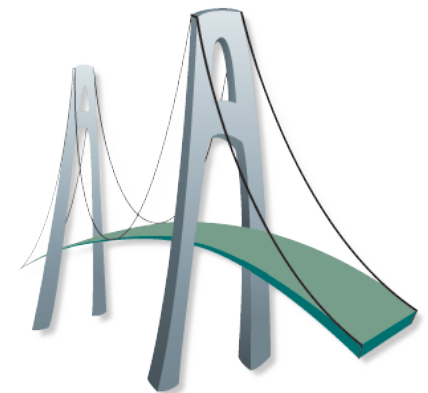
Immediate value + *future proofing*

- The immediate problem of how to get the new smart bin network up and running quickly, inexpensively, and with as little impact to existing systems as possible **was met**

- IT really liked the fact that IBM tooling for the new strategic middleware was close to 100% configuration-driven, and the business partner they chose to help them with the install got their internal people up to speed on the technology while delivering the project itself

- ❖ *IT really liked having the ESB in place because they were brewing their own plans to modernize some (not all!) of the back-end systems, and now they could tell the business they could do it without impacting the awesome new smart bin network!*
  - *The bill for the business logistics refresh, for instance, would be significantly reduced*

- ❖ *Plus, one of the new companies on the slate for acquisition, which is a much younger company than AMW, had almost all COTS apps built on .Net*
  - *The ESB now figured centrally in the plans to integrate those real time, Web services-based apps into existing solutions*
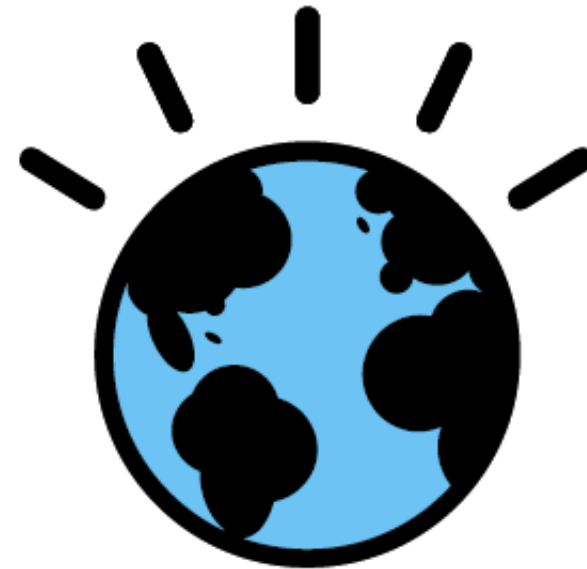
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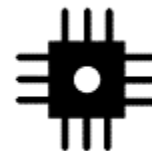
Appliances extend reach

Bus 2.0: the Hybrid Bus

How to learn more

Appendices
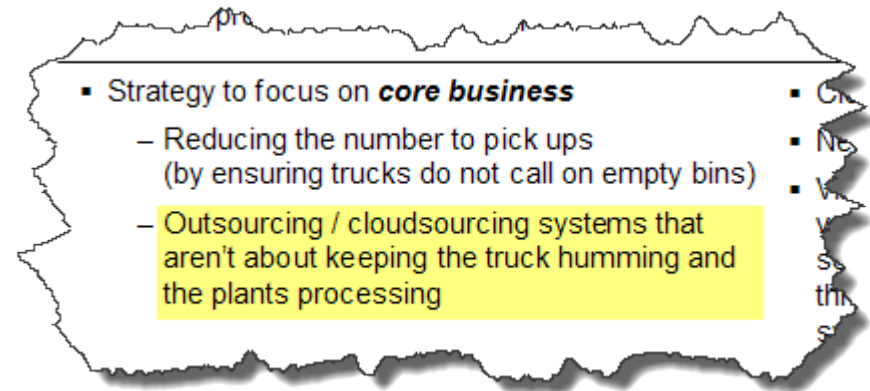
making your bedrock integration solutions even smarter

Poll Question #2

- Do you plan on using a cloud service within the next year?
    - Yes
    - No

Amalgamated Waste Management, part 2
Moving CRM to the cloud

- **At the same time,** the project was to roll out the new smart bin network, another program was underway to outsource CRM to SalesForce.com

- The ESB and MFT solutions were factored into work similarly to the smart bin network – insulating the batch-oriented apps from the real time messaging exchanges that the SalesForce.com services interfaced with

- Consuming cloud-based services was another operating model in which AMW lacked experience
  - Although SalesForce.com had mostly convinced the company the data was safe once in their cloud, many were worried about the security implications of passing customer data back and forth

- Strategy to focus on *core business*
  - Reducing the number to pick ups (by ensuring trucks do not call on empty bins)
  - Outsourcing / cloudsourcing systems that aren't about keeping the truck humming and the plants processing

- Others worried more about the costs of securing that connection:
  - How do we implement the security protocols SalesForce.com is talking about?
  - How do we "harden" our own systems to protect ourselves from being the security loophole for hackers?

IBM's strategy for enabling extra-enterprise connectivity is *appliances*

IBM's customers are responding, the install base grew from ~0 to <u>thousands</u> in 5 years

▪ What is an appliance?

– Appliances are all about **SPEED:**

- **Speed to get started** - It's a package of everything you need - hardware AND software – to rack, cable and get started on getting work done

- **Speed to configure** - It's designed from the ground up to do a limited set of functions, but do them by configuration only (Code-free!)

- **Speed to secure** - Designed from the ground up with features like default-off-delivery and tamper-proof casing so that they can be added to less-than-fully-trusted networks in the blink of an eye, compared to software solutions built on general-purpose runtimes, operating systems, and hardware

- **Lightning fast runtime execution**

▪ What does an appliance do:

There are a number of models now, including…

– *B2B Gateway* - Security-focused with additional qualities of service to meet SLAs and assure delivery of both messages and files. Partner management features prominently as well.

– *Cloud Connector* - Built specifically to adapt on-premise applications to cloud applications, it's the solution-of-reference for a number of the biggest cloud players, including SalesForce
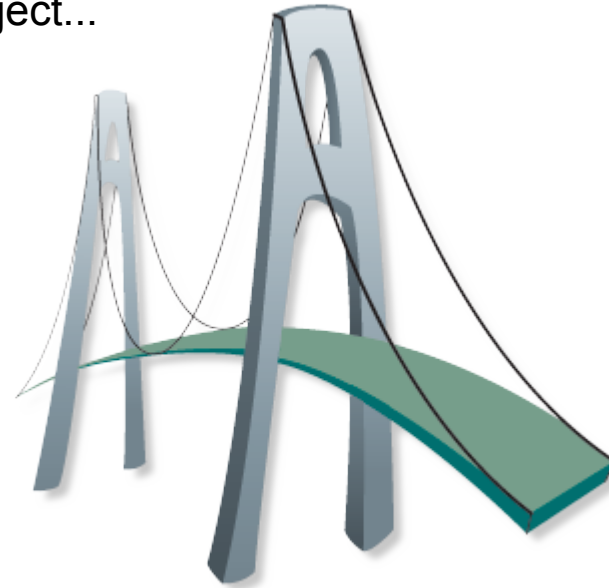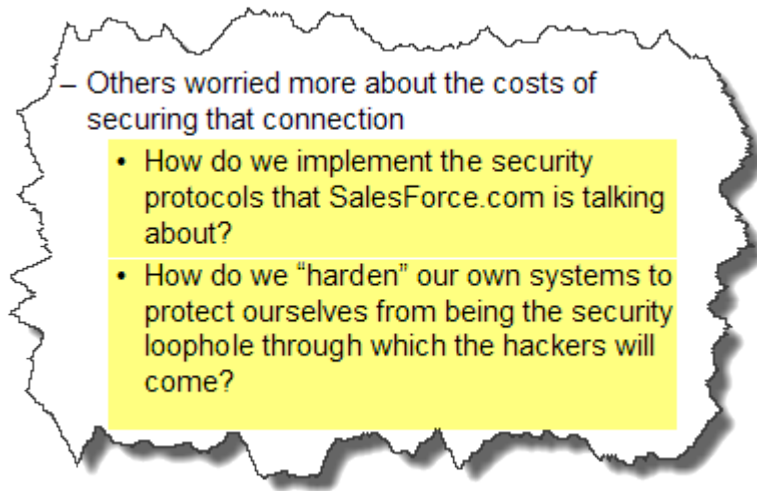
23

So for Amalgamated Waste Management...
the solution was to add an *IBM Connectivity Appliance*
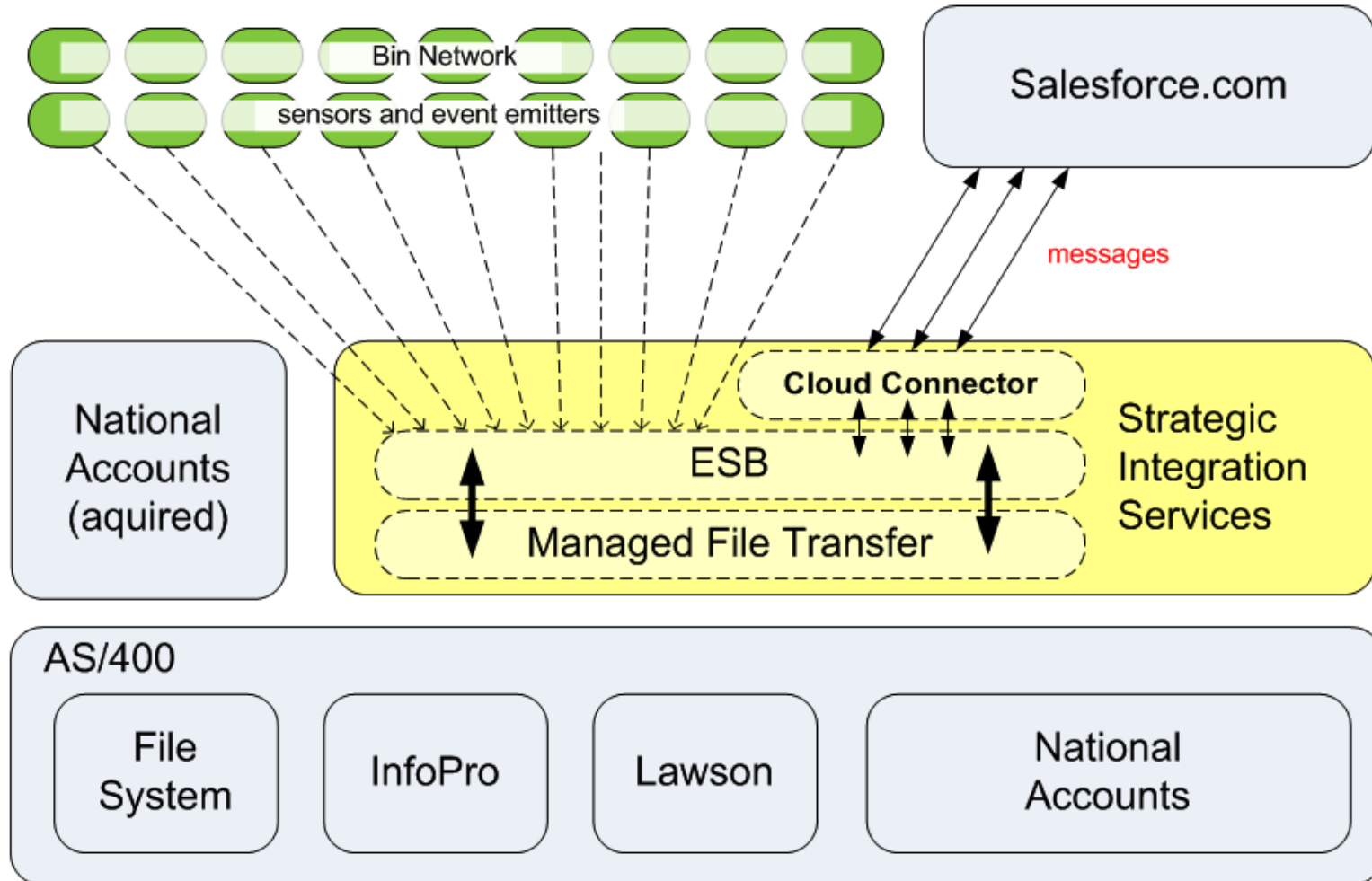
The bridge to the brave new world was built quickly and quietly...

Remember our concerns at the beginning of the project...

– Others worried more about the costs of securing that connection

  • How do we implement the security protocols that SalesForce.com is talking about?

  • How do we "harden" our own systems to protect ourselves from being the security loophole through which the hackers will come?

- Turns out it wasn't so hard after all:
  – Like any appliance you use at home, IBM Connectivity appliances are built to be installed and used immediately
  – The appliances built for security and application integration work have been under development for over 10 years now
    • The kinks are out and you can click-to-configure virtually any messaging pattern or security protocol a partner or cloud vendor can propose
  – The appliances are designed from the ground up to be exposed to less-than-fully-trusted network traffic, so there is **zero cost** to harden them for use in your DMZ networks
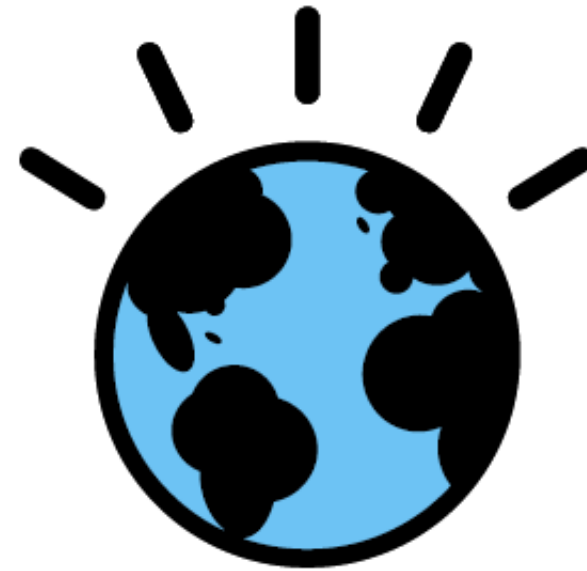
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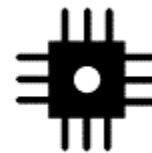ESBs extend to real time

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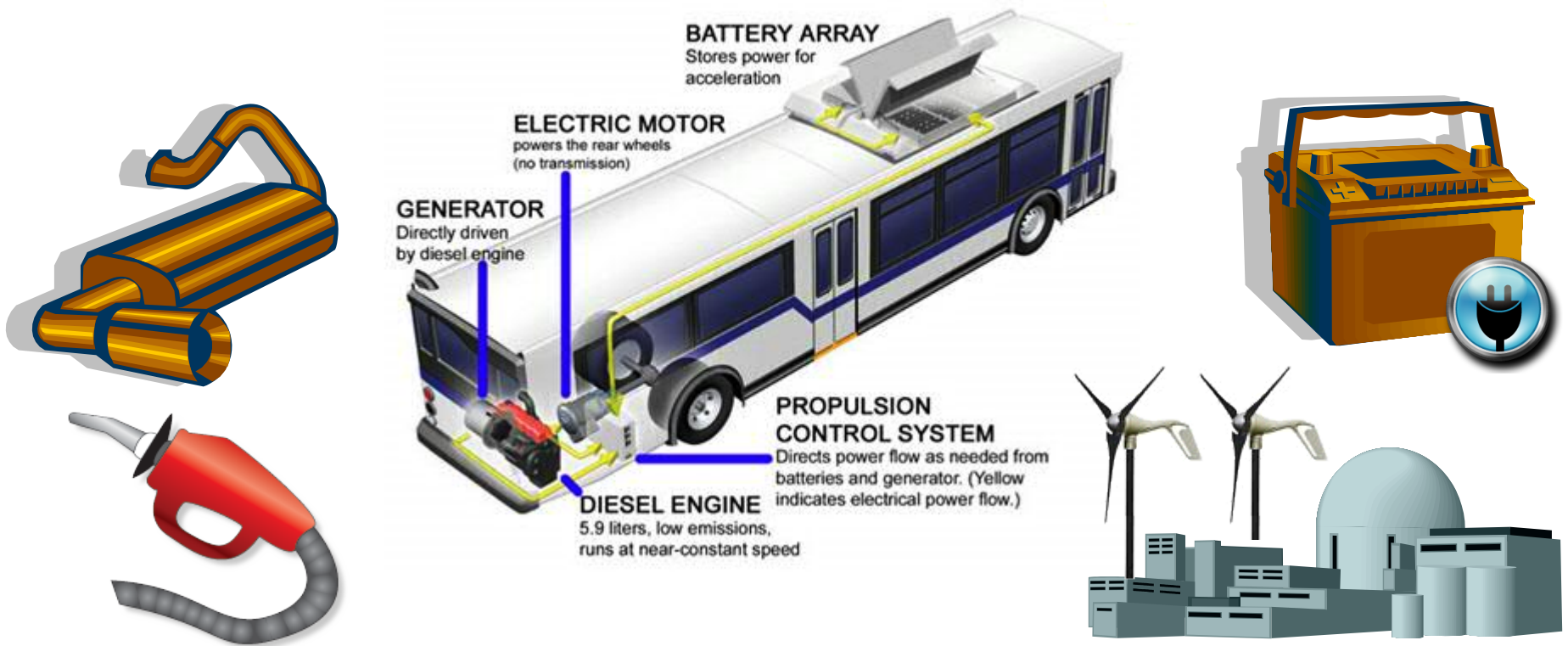making your bedrock integration solutions even smarter

IBM is taking its dominance in **appliance technologies** and fusing it with its **software** to create the next generation of connectivity solutions

HYBRID BUS

POWER

ECONOMY

BATTERY ARRAY
Stores power for acceleration

ELECTRIC MOTOR
powers the rear wheels (no transmission)

GENERATOR
Directly driven by diesel engine

PROPULSION CONTROL SYSTEM
Directs power flow as needed from batteries and generator. (Yellow indicates electrical power flow.)

DIESEL ENGINE
5.9 liters, low emissions, runs at near-constant speed

IBM is taking its dominance in *appliance technologies* and fusing it with its *software* to create the next generation of connectivity solutions

HYBRID BUS

POWER

- No need to sacrifice the complete flexibility and market-leading breadth of functionality provided by solutions built on general purpose platforms
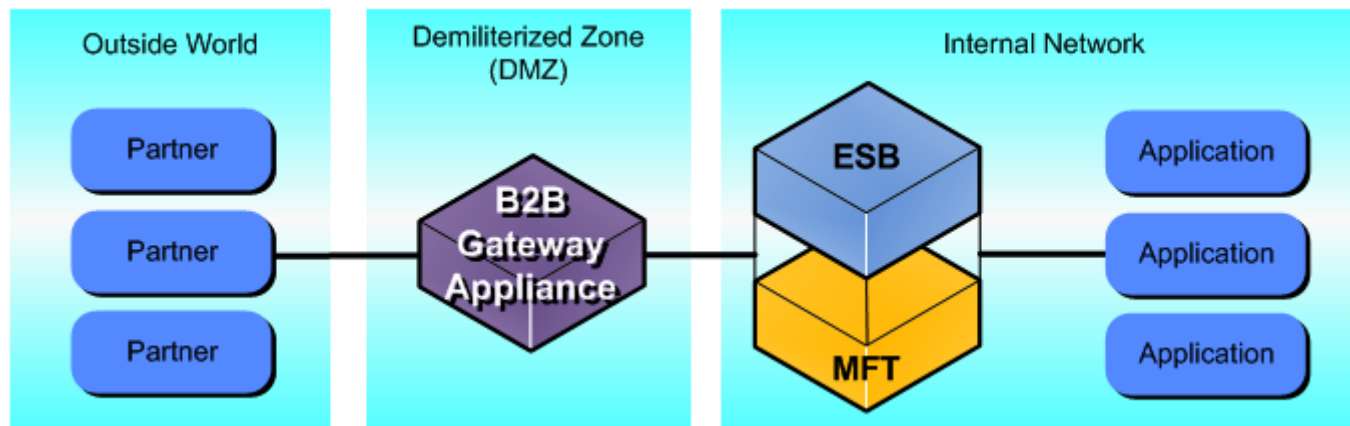
Appliance

ESB

MFT
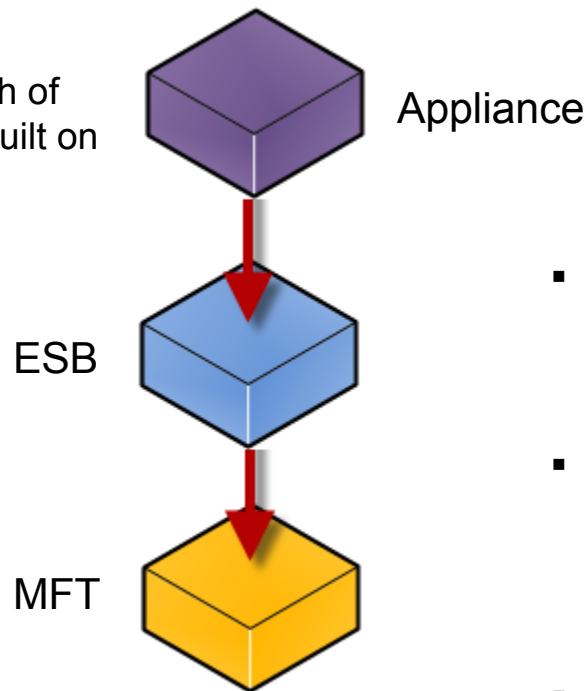
ECONOMY

- No need to pay the full cost of development, operations, and maintenance that general purpose platforms demand

- Appliances take the rote tasks that need to be done for every integration like security, protocol bridging, and routing, and offloads them from the software

- The result is a solution that is unmatched in terms of TCO

Makes and Models

Partner Bus

- Unlike in most internal application integration scenarios, service levels between the enterprise and partners are often enforced by monetary penalties, and violating them always carries more reputational risk

- IBM B2B Gateway appliances offer enhanced qualities of service for both message and file exchanges with partners, including assured delivery mechanisms across transport protocols

- We are often frustrated by partners who can't or won't do security in standard ways

- The B2B appliances, under development now for more than 10 years, support such a wide array of security protocols – from standard to custom – that the enterprise is free to accommodate any strange interaction pattern with the partner, but bridge to more sane mechanisms internally

- Terminate partner connections in the DMZ

Makes and Models
Cloud Bus
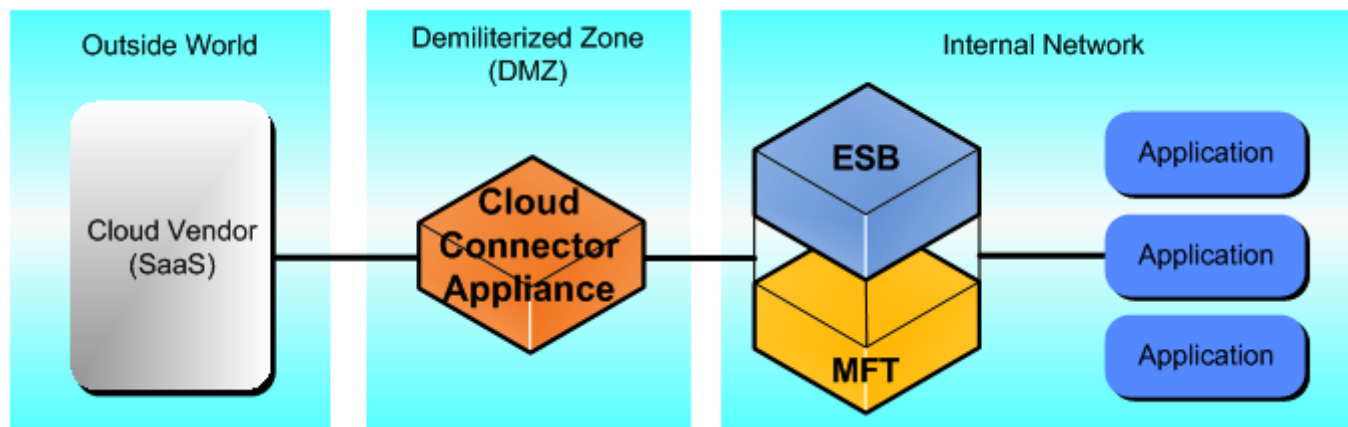
- This is the pattern employed by Amalgamated Waste Management

- Although the cloud is exploding with a flurry of real projects, it has been evolving for years; The leaders in the space have not yet standardized interaction patterns and protocols

- IBM's Cloud Connector appliance has itself evolved with the industry, and includes pre-built adapters for all of the big and small players

- It is the integrator-of-reference for SalesForce.com and many other vendors worldwide

Makes and Models

Optimizer Bus
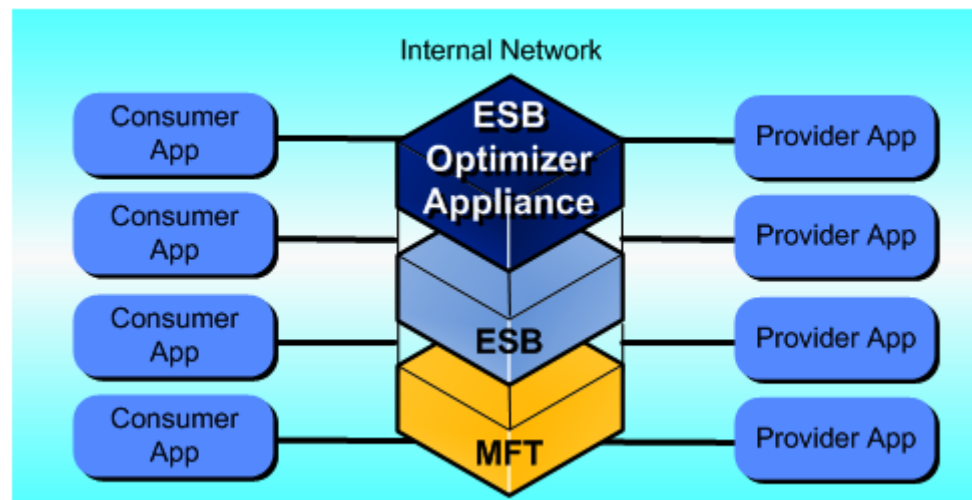
- Do you already have a software ESB deployed?

- Is your SOA program progressing, as more projects use the bus and add services?

- Are you reaching a point where you may have to scale up the infrastructure to meet utilization demands and stop complaints about new projects causing slow-downs for existing applications?

- Before you buy, consider adding an ESB Optimizer appliance to arrest the growth of your bus, and possibly even shrink the footprint of the software

- This is future-proofing at its best, there are other benefits to this model too, like reduced development and testing effort for your ESB work

Makes and Models

Accelerator Bus
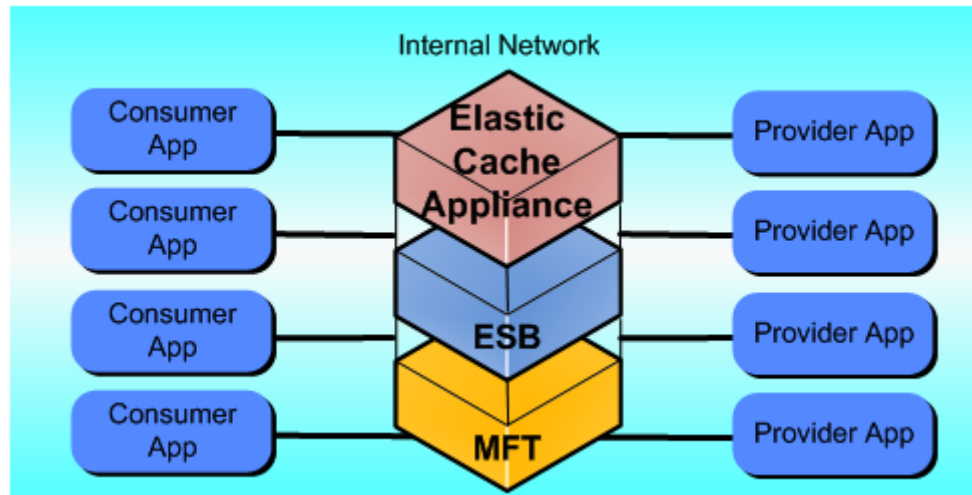
- Many organizations that have already embedded the bus in the stack provide mission-critical, customer-facing database-to-UI applications looking to improve customer experience by caching in front of the database

- The IBM Elastic Cache appliance accelerates the user experience by serving up what normally would have required a database call

- The IBM Elastic Cache appliance seamlessly decides whether or not a database call is required

- No more abandoned shopping carts because the Web site is too slow
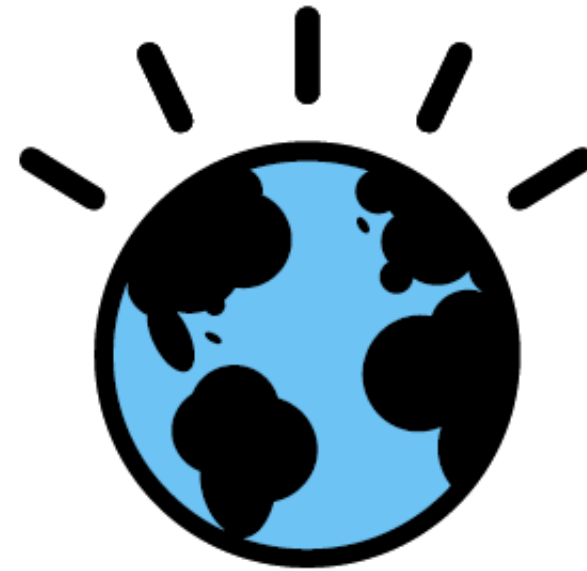
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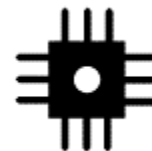ESBs extend to real time

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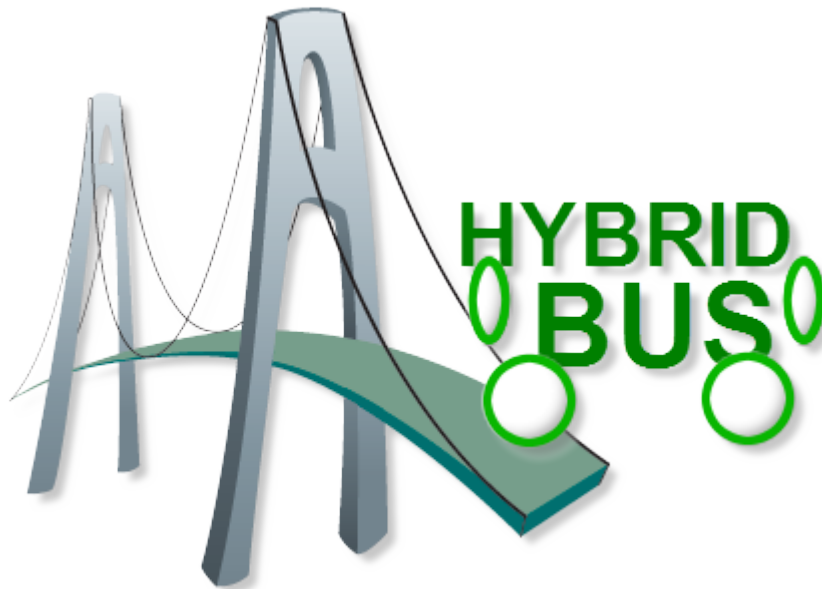
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How to learn more

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making your bedrock integration solutions even smarter

The Hybrid Bus and Bridges to New Business Success
How you can learn more...

- Unsure of what solution might be best for your business? *Let's workshop it!*
  - IBM offers free interactive sessions with its Connectivity Architects to discover your requirements and collaboratively plan for the future
  - Talk to your IBM sales representative to make arrangements

- Do you think you have a bead on what you need? Come to a *Proof of Technology* (*PoT*)
  - Free, day-long sessions where you work directly with the products, completing labs which will give you a good feel for what they are all about
  - Talk to your sales representative for details

- *IMPACT Comes to You*
  - The WebSphere IMPACT conference is over for 2011, but it is now on the road, coming to a location near you

http://www-01.ibm.com/software/websphere/events/impact/icty_events.html

THANK YOU!

Questions?

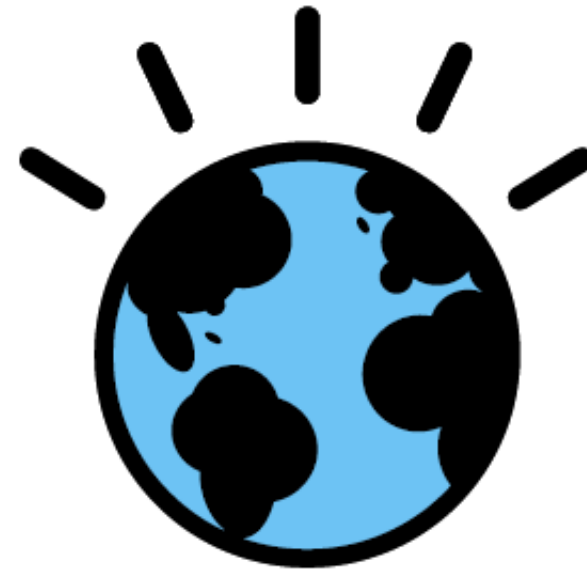# Agenda

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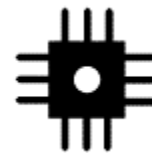ESBs extend to real time

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making your bedrock integration solutions even smarter

Appendix A:
Finer distinctions between MFT and SOA

SOA is about reducing the costs of <u>real time integration</u>
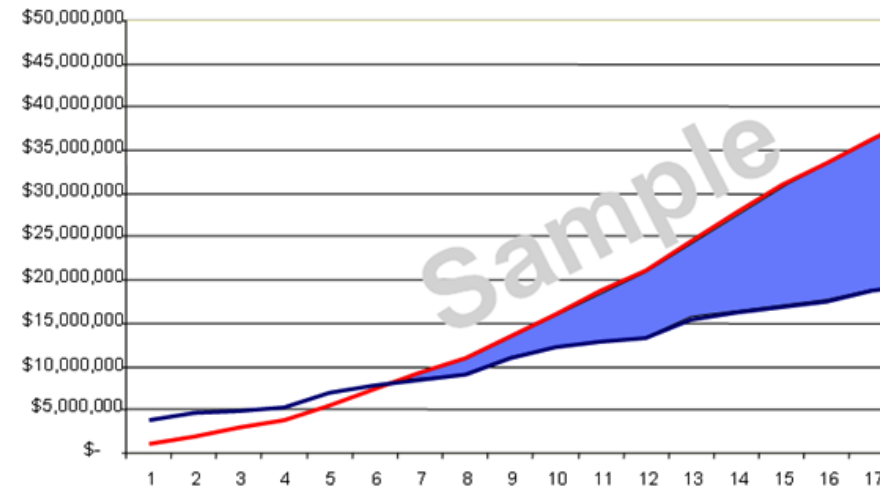
IT Budget

$27 New

$73 Maintain

The conundrum facing CIOs:

How to get more for less when...

- Fixed costs of maintaining existing systems consume IT budgets

- Limited opportunities for new value-adding investments

- Every new investment creates additional maintenance costs

Source: Boston Consulting Group

Returns are based on reducing the cost to build & maintain solutions.

Do Nothing
Adopt SOA

Sample

- Most organizations apply returns back to the project budget
- This is in large part meant "SOA increases business agility" – after a short period of time recovering initial investments, SOA shops are able to devote more of their resources to delivering new functionality to the business
- IBM can help you make the business case for bringing in technologies needed to realize an SOA vision

Inventory of Existing Services
Assuming steady-state funding   □ succes   ■ failure

3,000,000

2,500,000

ESB

2,000,000

1,500,000

P2P

1,000,000

500,000

0

EXAMPLE

2011   2012   2013   2014   2015
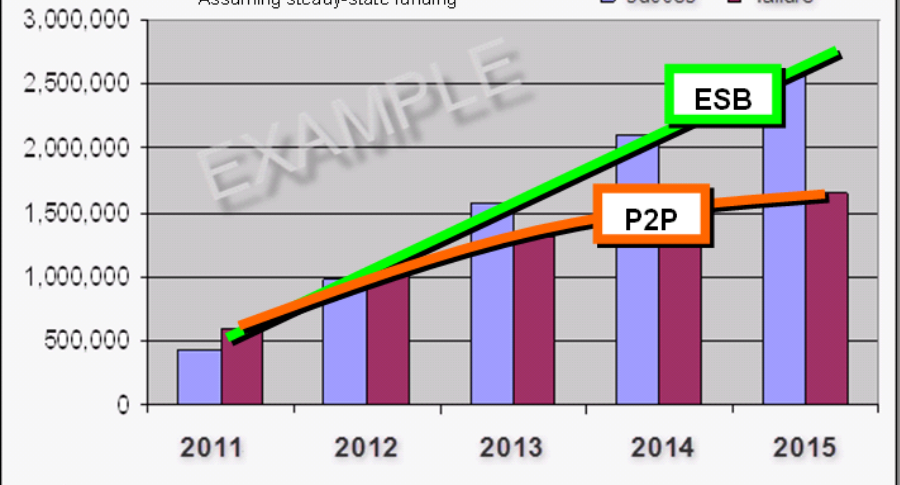
The *Enterprise Service Bus* is at the heart of service orientation
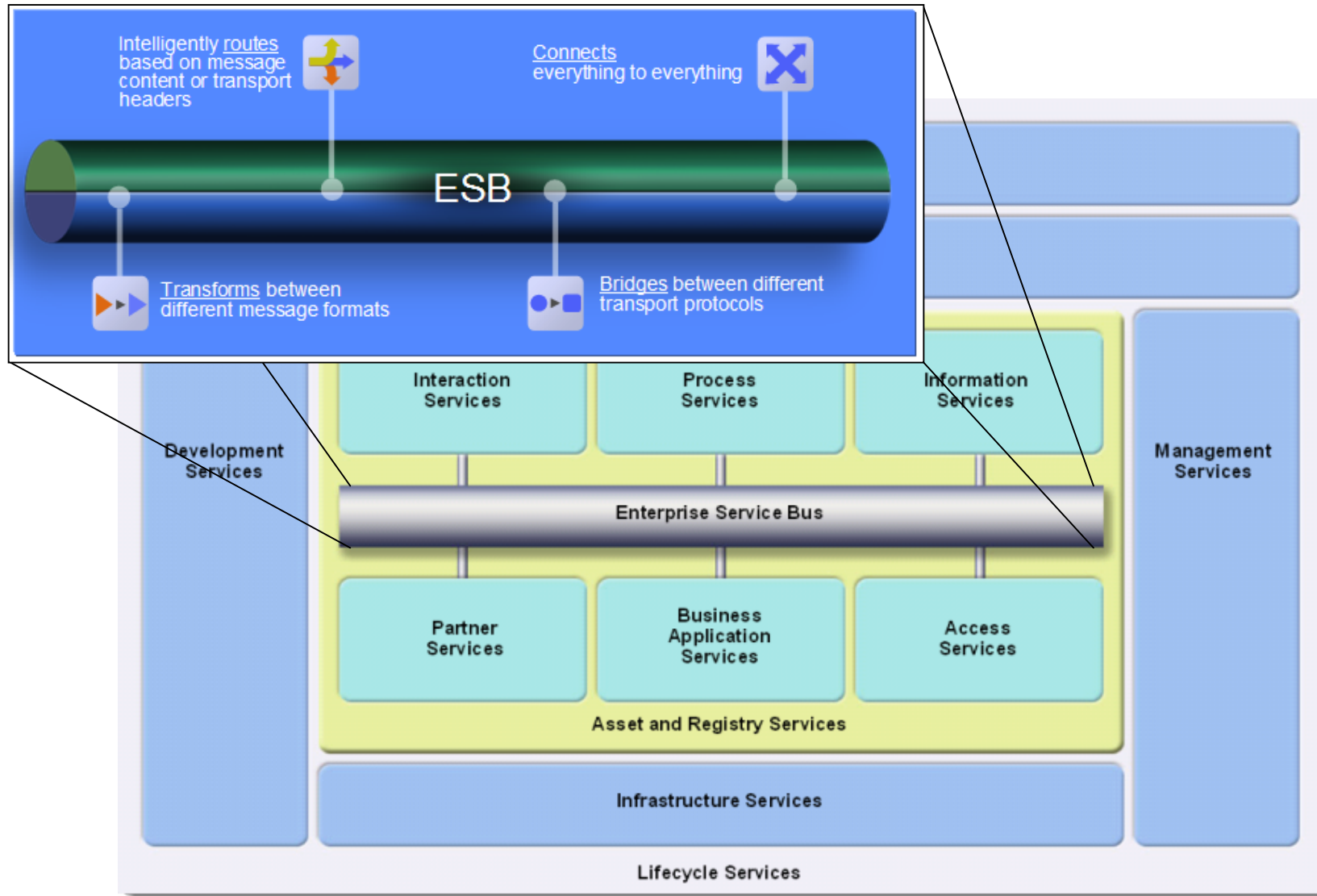
An ESB is functionally pretty simple
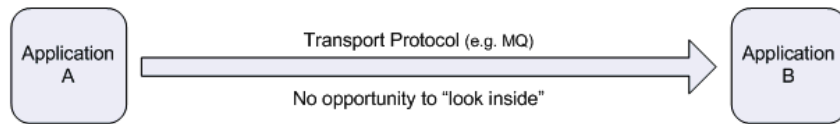
Application A — Transport Protocol (e.g. MQ) → Application B

No opportunity to "look inside"

- Point-to-point communications use protocols that are agnostic as to the content of the message traversing the connection
- ESBs are fundamentally reverse-proxies, which puts them in the position to do work in between the terminated connection and the new connection to the target application

Routing

ESB

Mediation

Delivery

Protocol Bridging

Transformation

Application A — Transport Protocol (e.g. HTTP) → Terminate

Do some work

Connect — Transport Protocol (e.g. MQ) → Application B
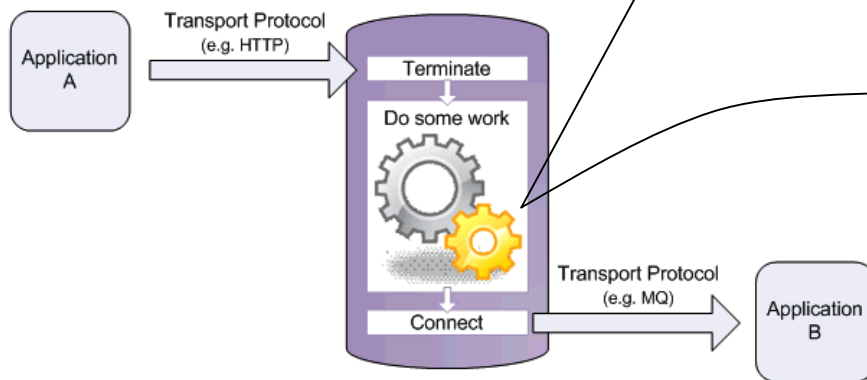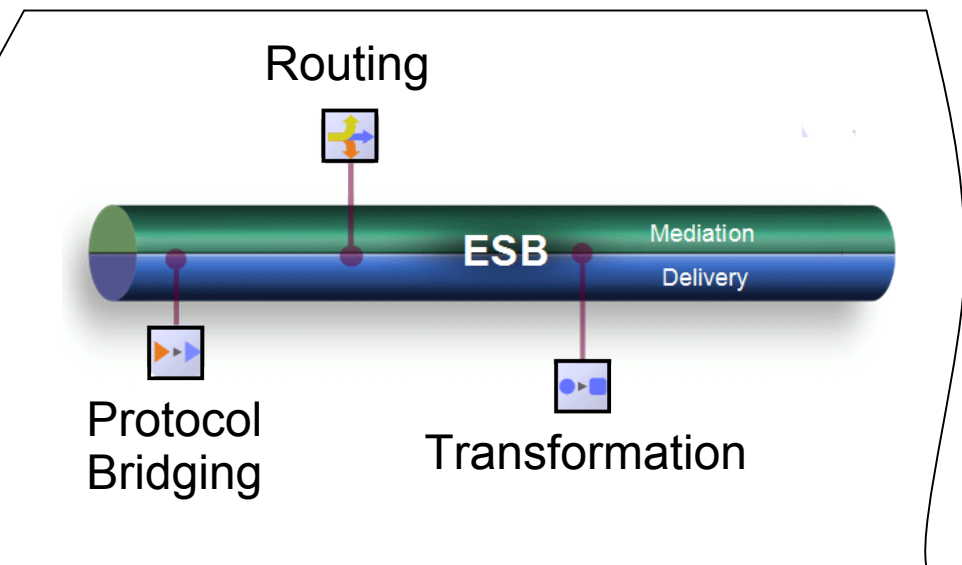
Those functions are used in a certain way to create value...

SOA / ESB savings come from:

- *Reusing services* (it costs ~20% to reuse an existing ESB service as opposed to building a new interface directly into an application)

- *Reducing the number of connections* you need to maintain a support application integration (each app needs a single connection to the ESB instead of one to each service provider)

- *Reducing the complexity of connections* maintain (by promoting and gradually migrating to open, standards-based interfaces, instead of proprietary and legacy APIs)

Business Application A

Business Application B

Business Application C

ESB

Reuse drives savings

Service Façade

Standards-based interfaces are supported by all COTS solutions, making adopting new apps much less costly

router

transform

transform

Application Interface

Application Interface

Business Application P1

Business Application P2
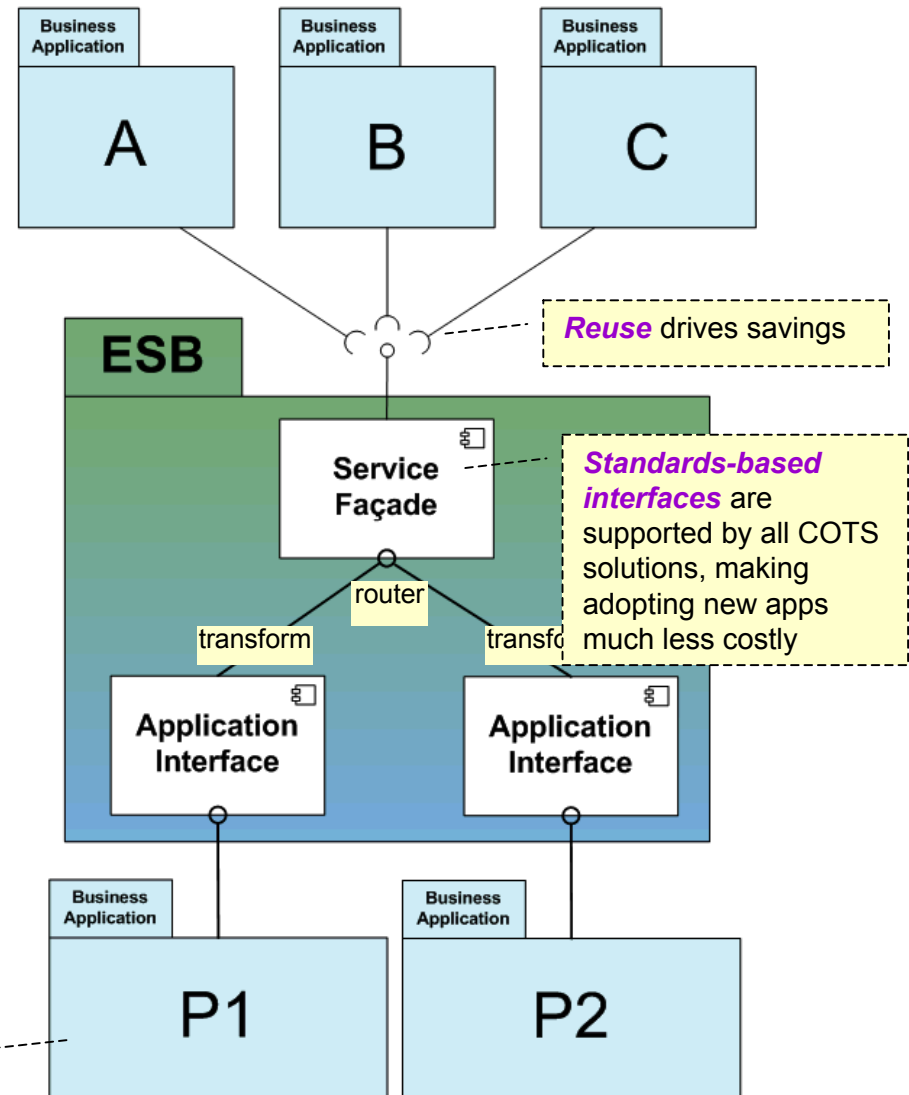
Loose-coupling reduces the cost to change provisioning apps – even swapping them out is possible without impacting existing consumers

This is where ESB solutions differ from MFT solutions...

Although both solutions are meant to "get control of" hairballs of point-to-point solutions that use point-to-point protocols…

ESB

MFT

Application A → Transport Protocol (e.g. HTTP) → Application B
No opportunity to "look inside"

Transport Protocol (e.g. HTTP)
Application A → Terminate → Do some work → Connect → Transport Protocol (e.g. MQ) → Application B

Application A → Transport Protocol (e.g. SFTP) → Application B
No opportunity to "look inside"

Transport Protocol (e.g. SFTP)
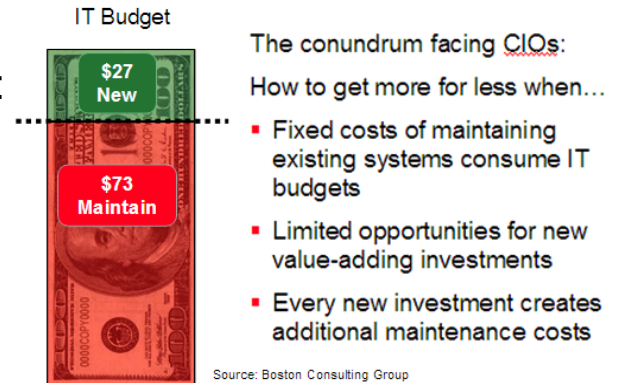Application A → Terminate → Connect → Transport Protocol (e.g. SFTP) → Application B

… MFT <u>does not</u> terminate the inbound connection from the source and then create a new connection to the target in order to get the file there

- No opportunity to "do work" between the two connections

- The benefits of MFT <u>are not</u> provided by location-transparency, reuse or loose-coupling

Managed File Transfer is about the <u>Management</u>

- Providing a single, centralized platform through which to set up, maintain, and administer all file transfers

- Adding qualities of service absent in point-to-point solutions:
  - Proactive alerting for missing or late transmissions
  - Guaranteed delivery
  - Scheduling

- Reducing the time and effort required to:
  - Setup new transfers
  - Make ad hoc changes and exceptions
  - Track down transmission problems

- Managing partner relationships:
  - Rapid onboarding
  - Service level agreements

It's about reducing the drain on your IT budgets attributable to operating hundreds or more p2p file transfers

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Source: Boston Consulting Group

So the MFT business case is very much like the SOA business case.

Do Nothing
Adopt MFT

$50,000,000
$45,000,000
$40,000,000
$35,000,000
$30,000,000
$25,000,000
$20,000,000
$15,000,000
$10,000,000
$5,000,000
$-

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17