

Return on Investment & Cost Benefit Analysis of a Strategic IT Architecture for the Utility Industry

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- Why ROI?
- Business Case: IT Challenges & Solution
- Industry Comparison
- Cost Model
 - Utility's Cost Model for Point to Point integration
 - Calibrated Cost Model for SOA integration
- Return on Investment (ROI)
- Cost Benefit Analysis (CBA)

Fact

- Future = OT + IT
- Today IT Integration: Static, Tactical & P2P
- Need Alternatives

Risk

- No Smart Grid without IT
- Cannot Scale & cannot deploy new Services
- P2P: Tactical, Not Scalable
- SOA: Strategic, Scalable

Why ROI & CBA: Provides the Business Case

CURRENT STATE

- The Accidental Architecture
- P2P Interfaces
- Ripple Effect

NEW NEED

→ NEW DATA

- AMI Interval Data
- Sensor Data

→ NEW INTEGRATION

- New AMI System
- OMS, DMS
- Legacy Upgrades CIS, GIS, Financials

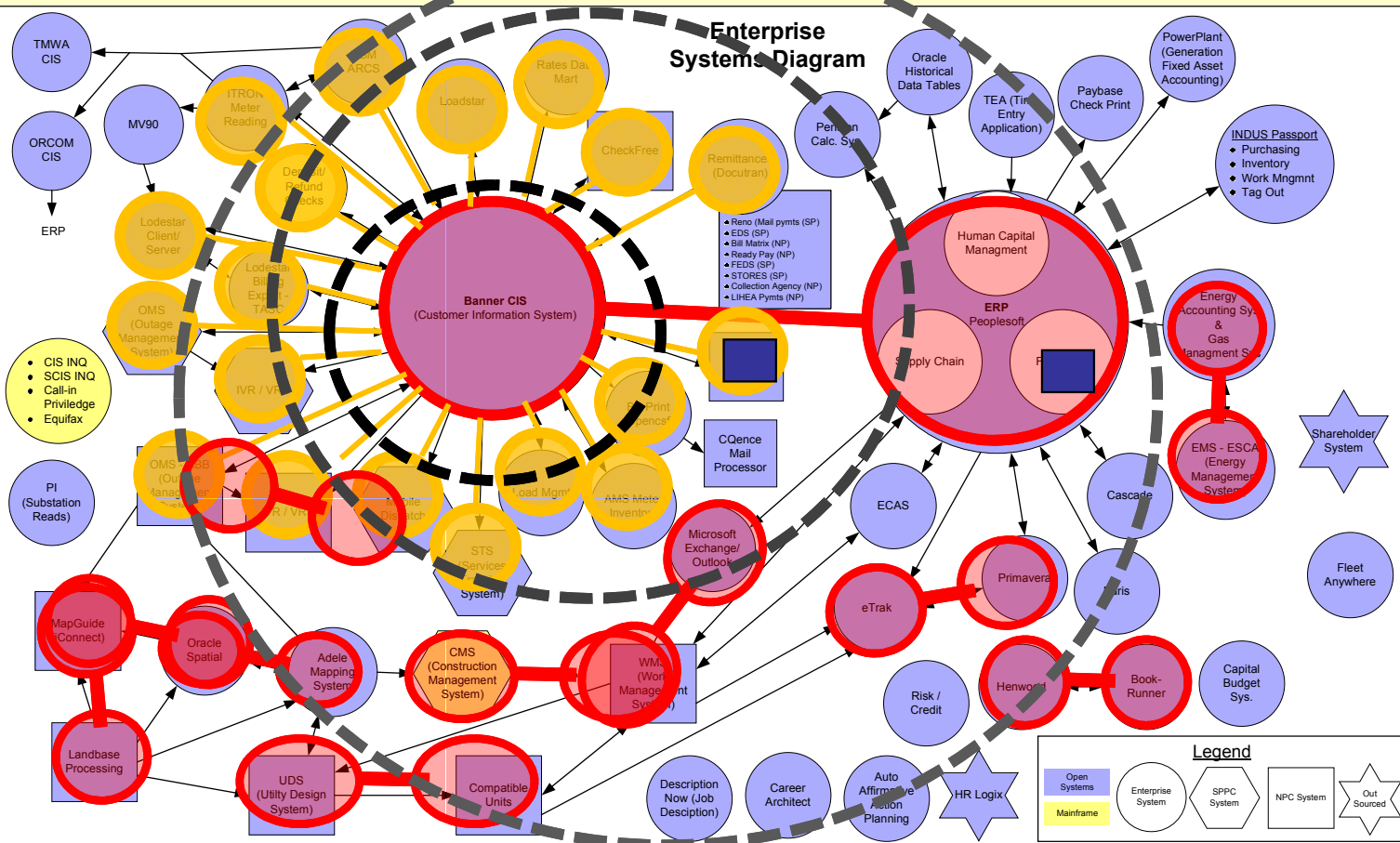
→ NEW CAPABILITY

- Cust Empowerment
- Transaction Volume
- Real Time Data
- Partner Integration

→ NEW OPPORTUNITY

- Dist. Generation
- PHEVs
- Settlement & Billing

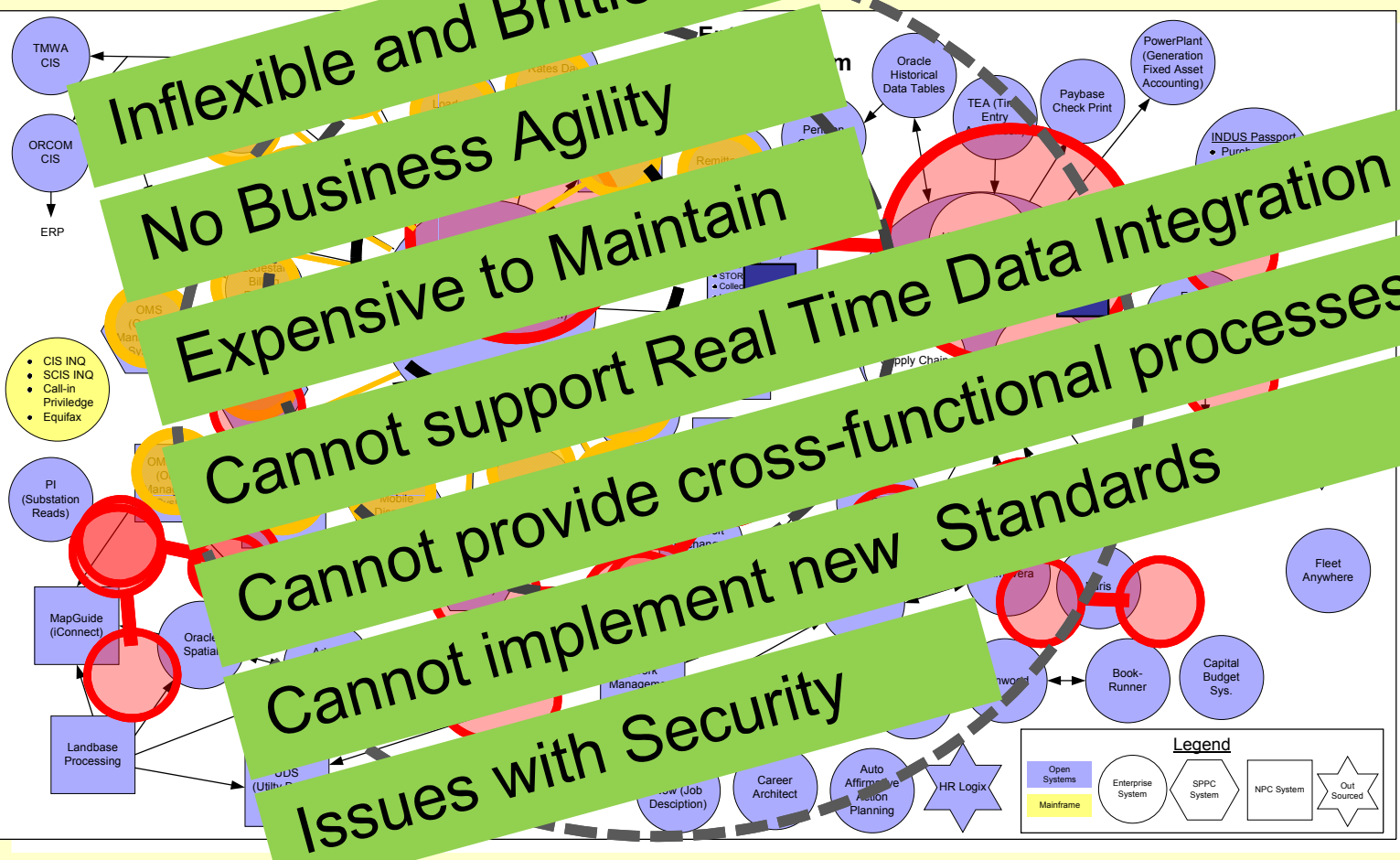
Enterprise Systems Diagram



Business Case: Why strategic IT ?

CURRENT STATE

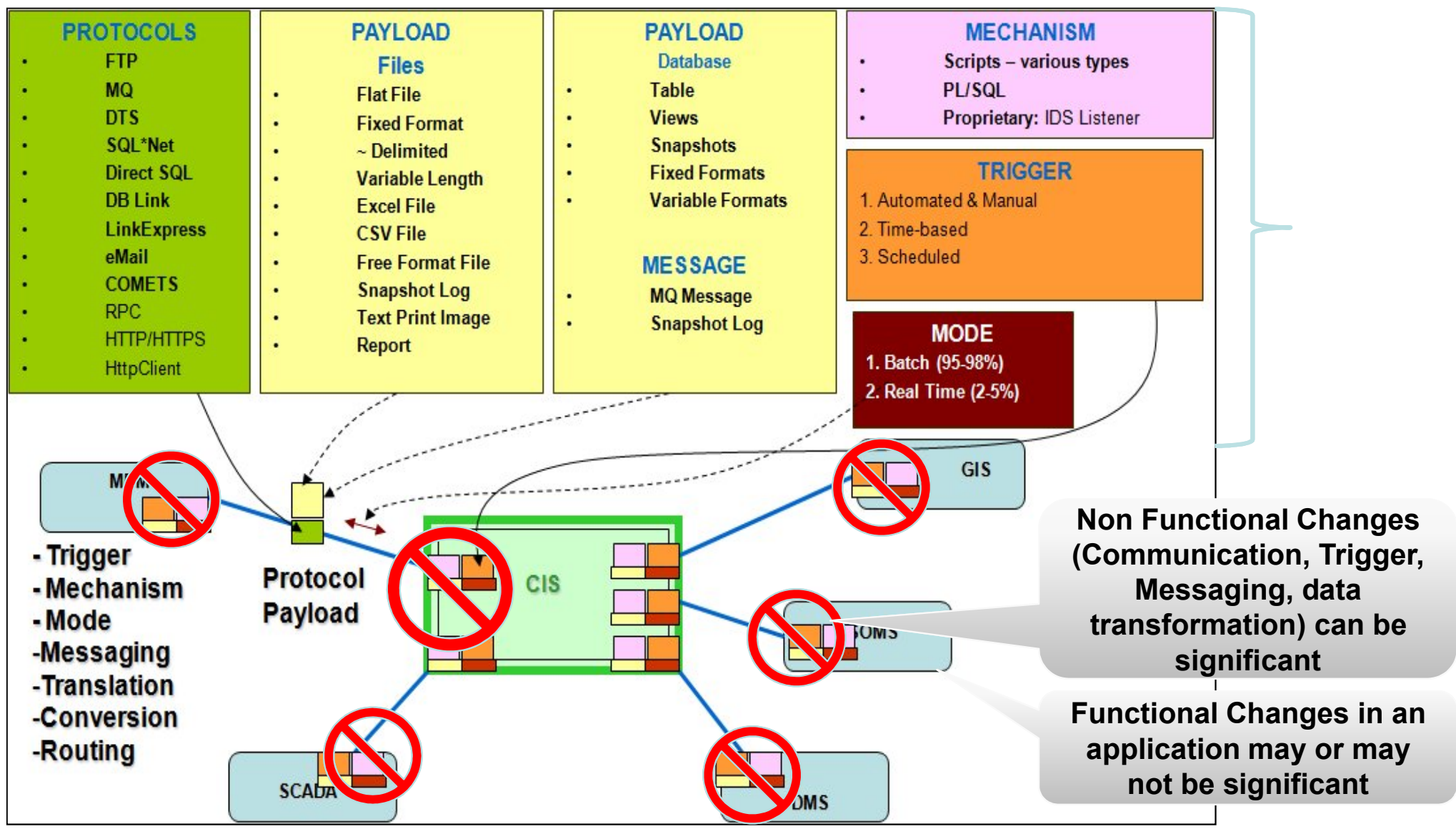
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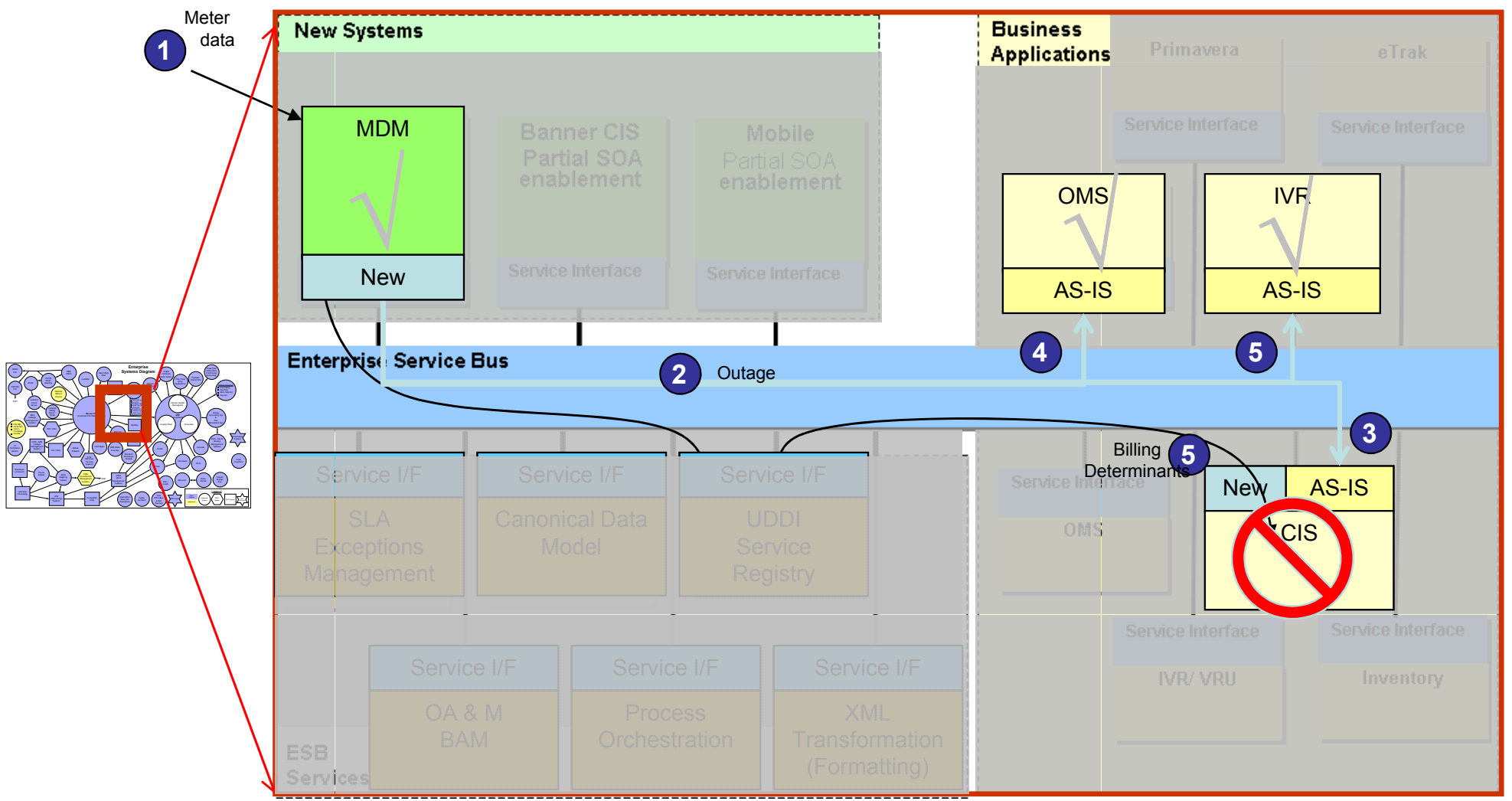
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Limitations of Point to Point approach

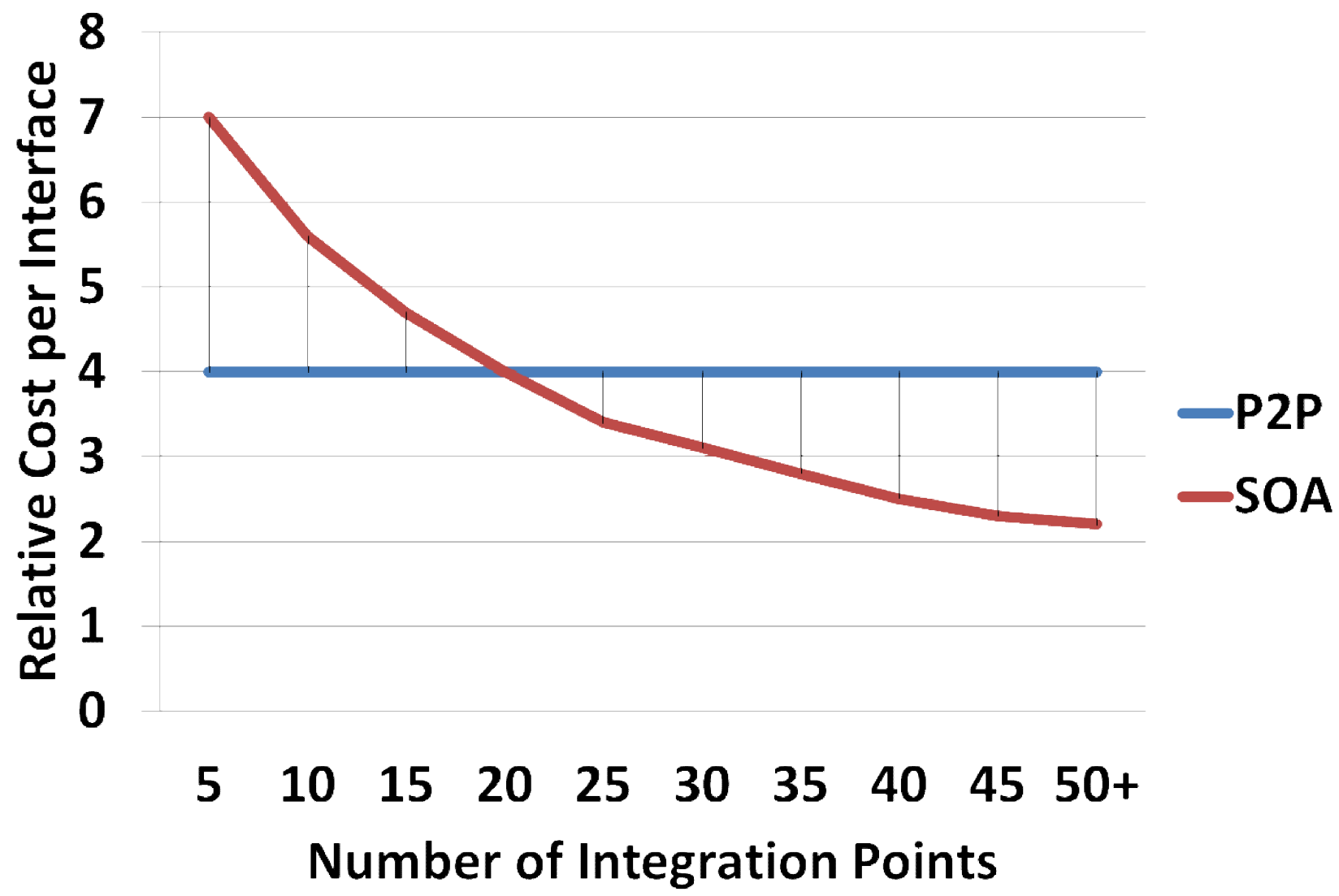


How SOA Solves the Problem

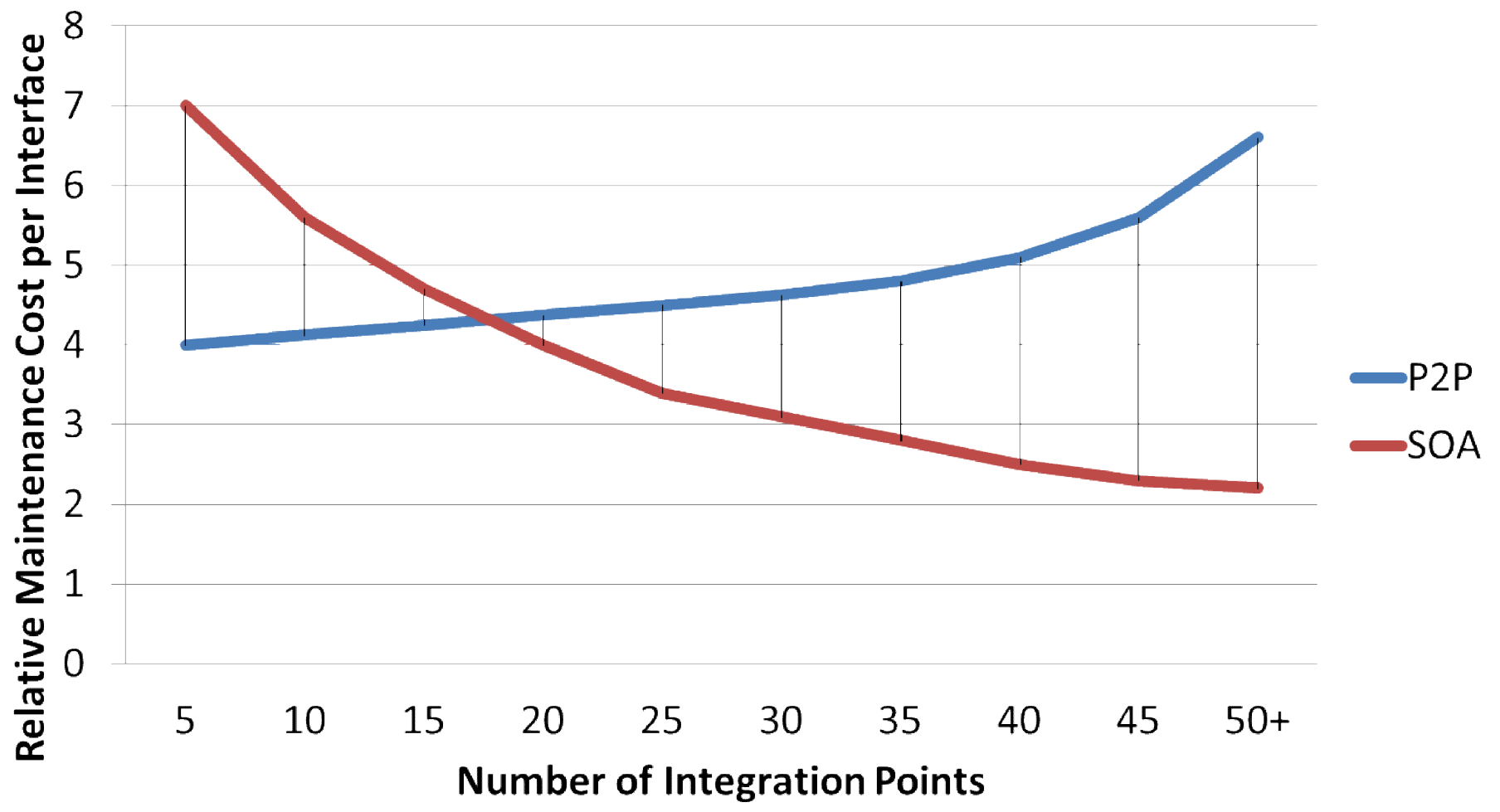


- **Plan:**
 - Strategic use of IT versus Tactical after the fact
- **Develop:**
 - Strategic IT Architecture (SOA)
 - IT Governance
 - IT / Organizational Transformation
- **Execute:**
 - Tactically without compromising strategy
 - Catalyst Project
 - Service Oriented Architecture (not P2P)
 - Integration Center of Excellence

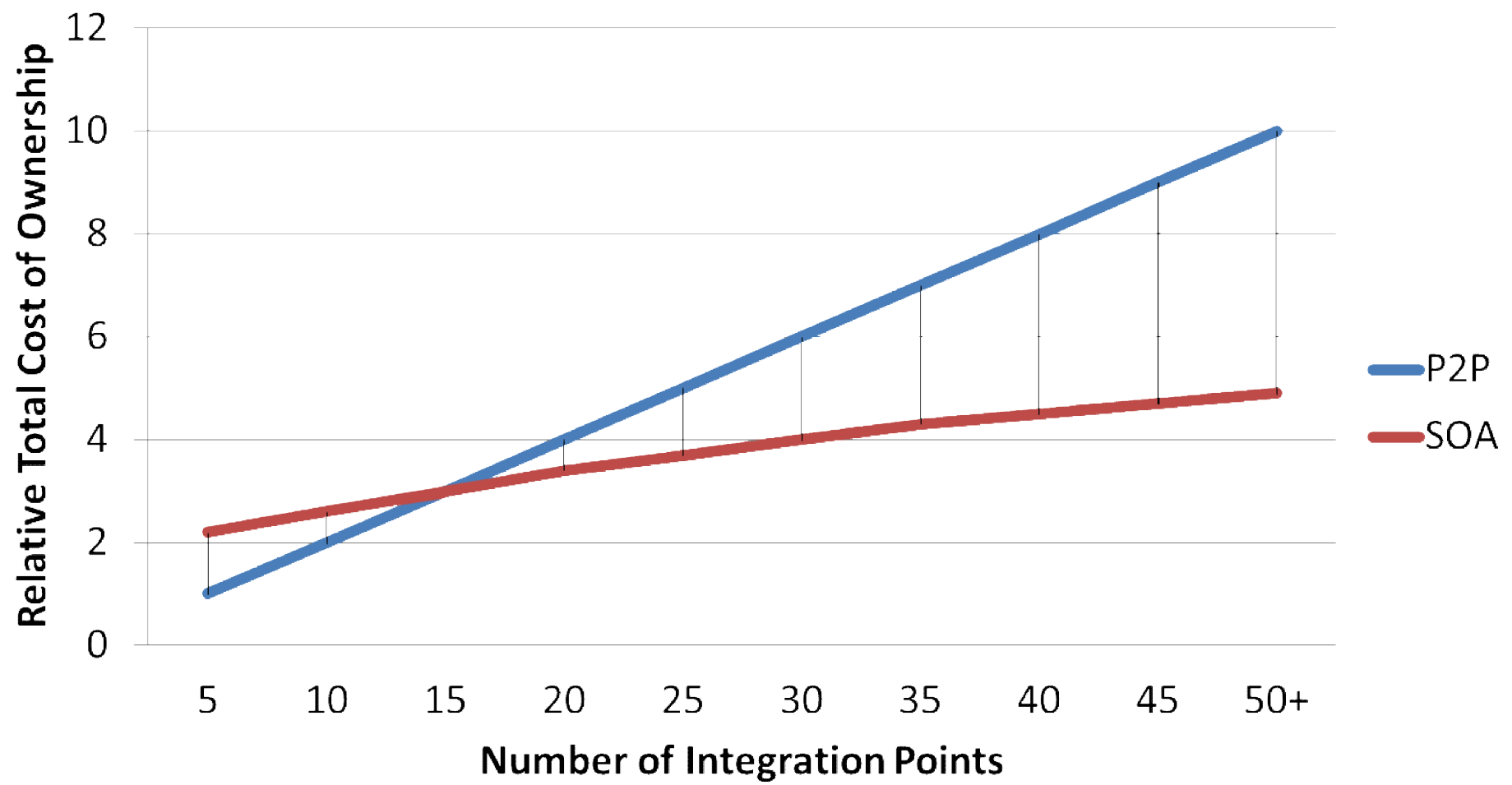
Development Cost of each Interface



Maintenance Cost of each Interface



P2P vs SOA Total Cost of Ownership Comparison





ROI Cost Components –Units of work

#	Cost	Area	Point to Point			SOA			
			Source App Unit of Work	Destination App Unit of Work	Total Cost Units of Work	Source App Unit of Work	Destination App Unit of Work	Middleware Unit of Work	Total Cost Units of Work
1 Design									
	Functional Design		1	1	4	1	1		3
	Non Functional Design		1	1				1	
2 Development									
	Functional Design		1	1	4	1	1		3
	Non Functional Design		1	1				1	
3 Maintenance									
	Functionality Maint.		1	1	4	1	1		3
	Non Functional Maint.		1	1				1	
	Proprietary Interf Maint.		1	1	2			1	1
4 Tools & Training									
	Various tools		1	1	2	N/A	N/A	N/A	3
	One middleware		N/A	N/A				3	
Total Units of Work			With P2P In Src & Dest. Apps. 16			With SOA in Src, Dest & Middleware 13			



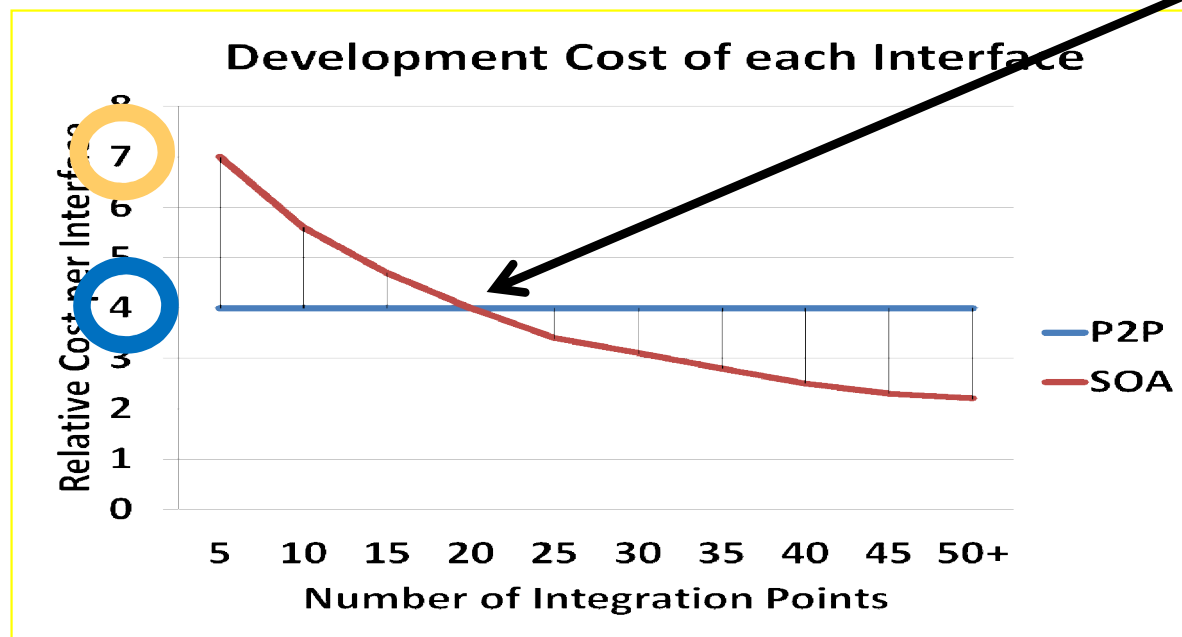
Utility's Real Cost of one Interface \$\$

Traditional P2P, Tactical Approach

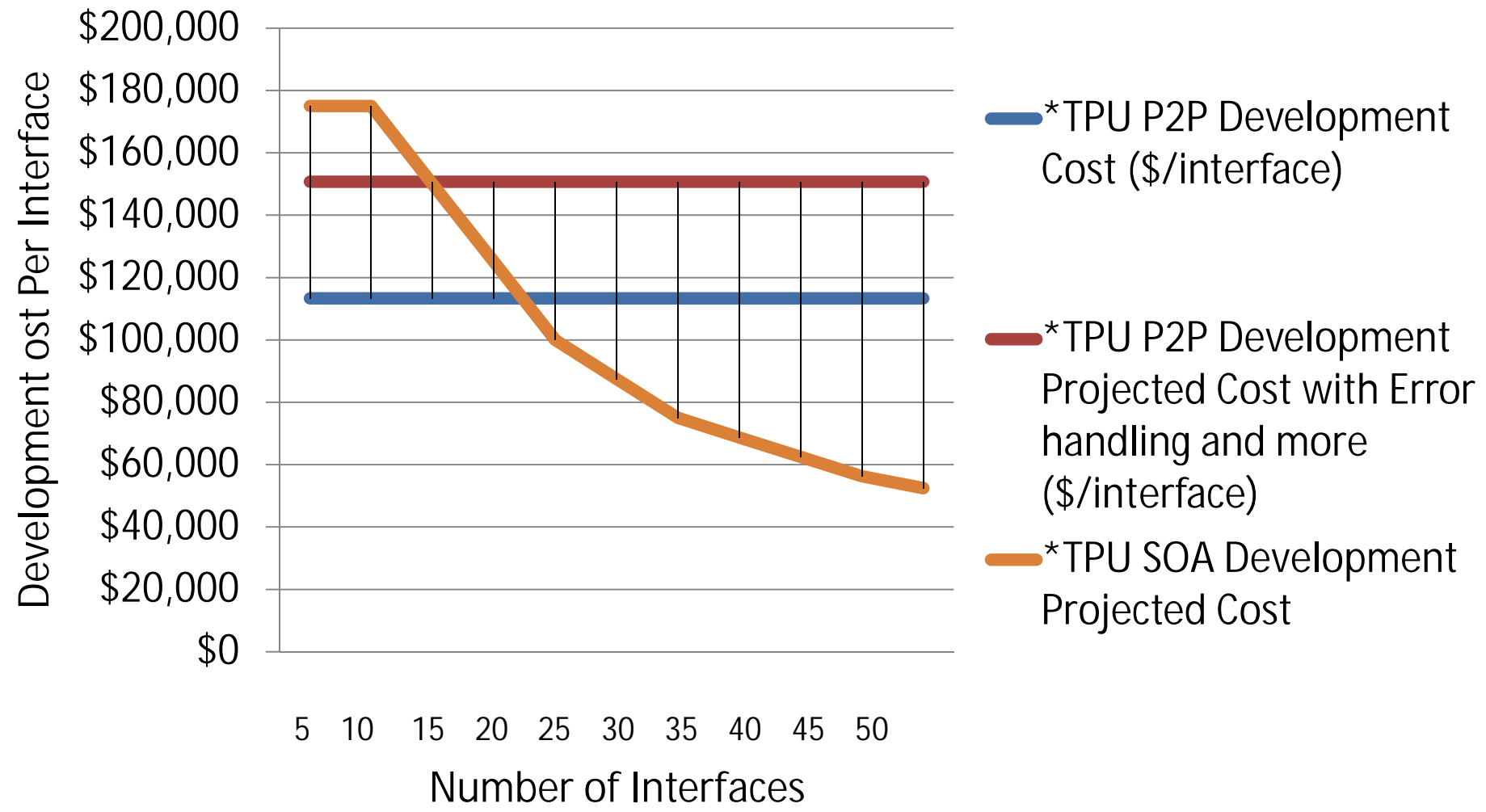
1 Internal Labor		\$33,333	
2 External Consultancy		\$66,667	
3 Changes to Code		\$13,333	
4 Maintenance (one interface)			\$17,000
		\$113,333	
		Design & Development	Maintenance
5 Non Functional Changes (Error, Failure, Scalability)	33%	\$37,400	
6 Maintenance (errors, failures)	15%		\$22,610
Total of Design, Development & Maintenance Cost		\$150,733	\$37,610

B. Design & Development Cost for a Range of Interfaces

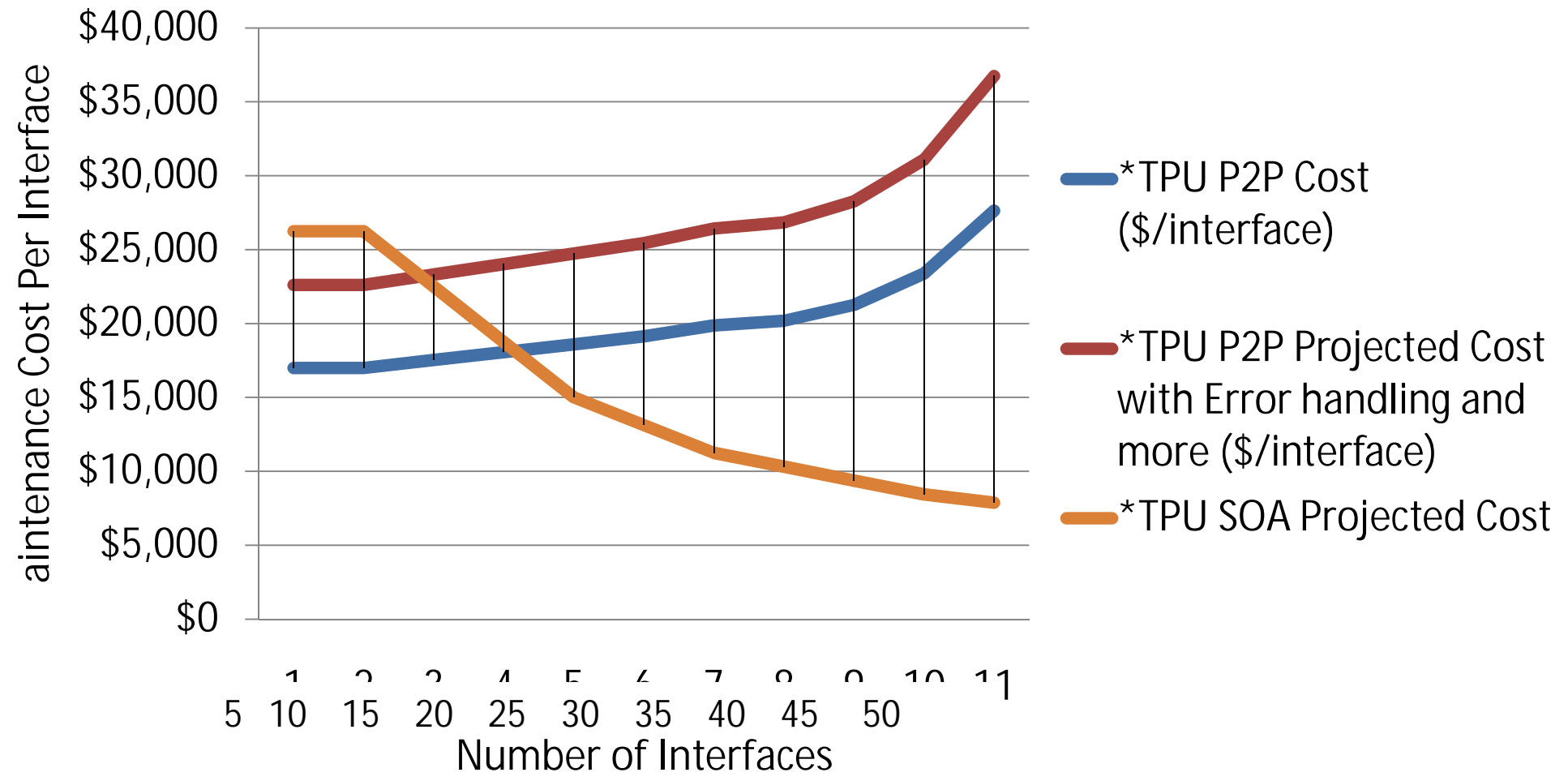
	1	2 to 5	6 to 10	11 to 15	16-20	21-25
P2P	4	4	4	4	4	4
	\$113,333	113,333	113,333	113,333	\$113,333	113,333
	\$150,733	150,733	150,733	150,733	\$150,733	150,733
SOA	7	7	6	5	4	3.5
	\$263,783	263,783	226,100	188,417	\$150,733	131,892



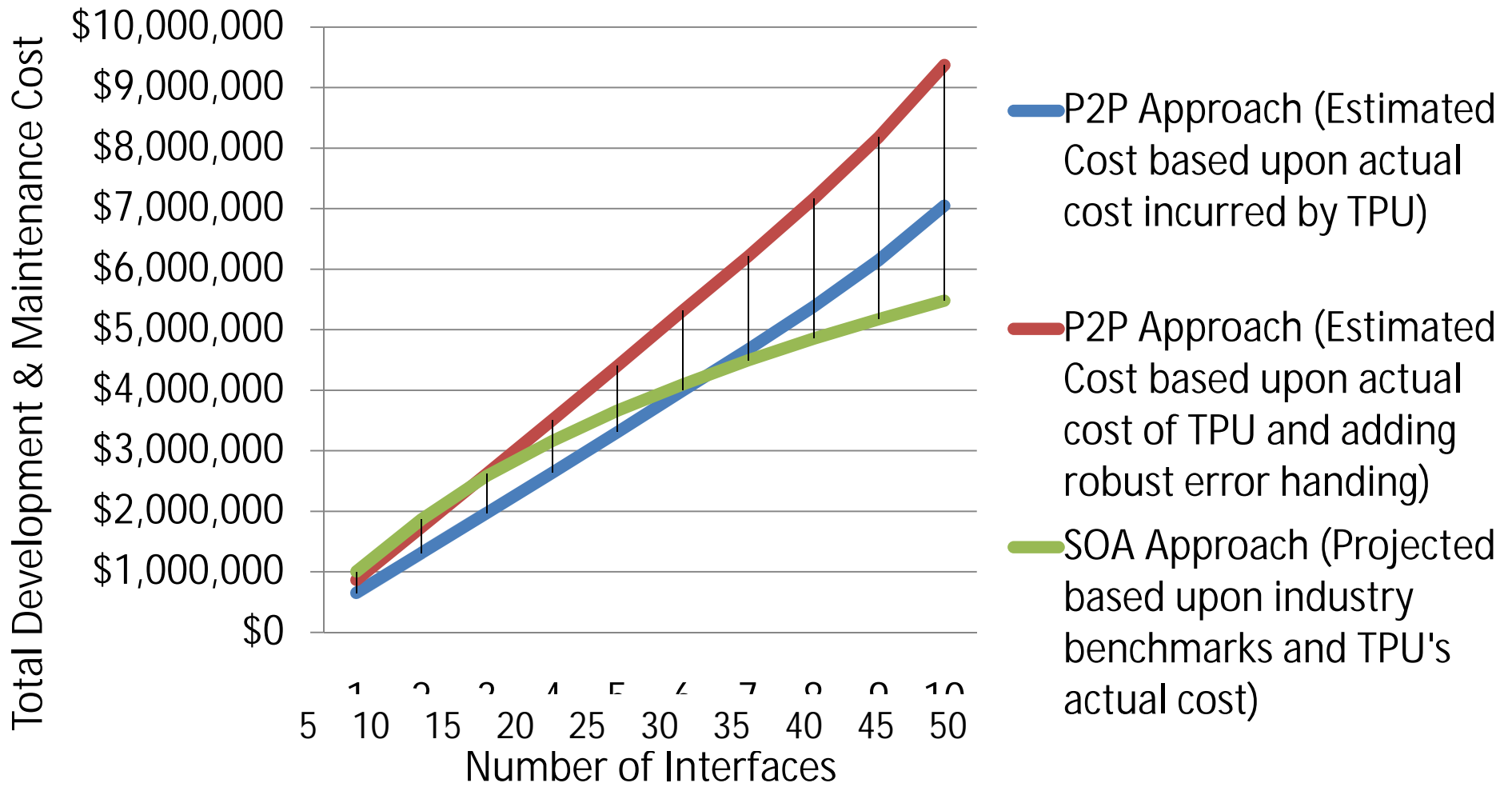
Development Cost per Interface: P2P vs SOA

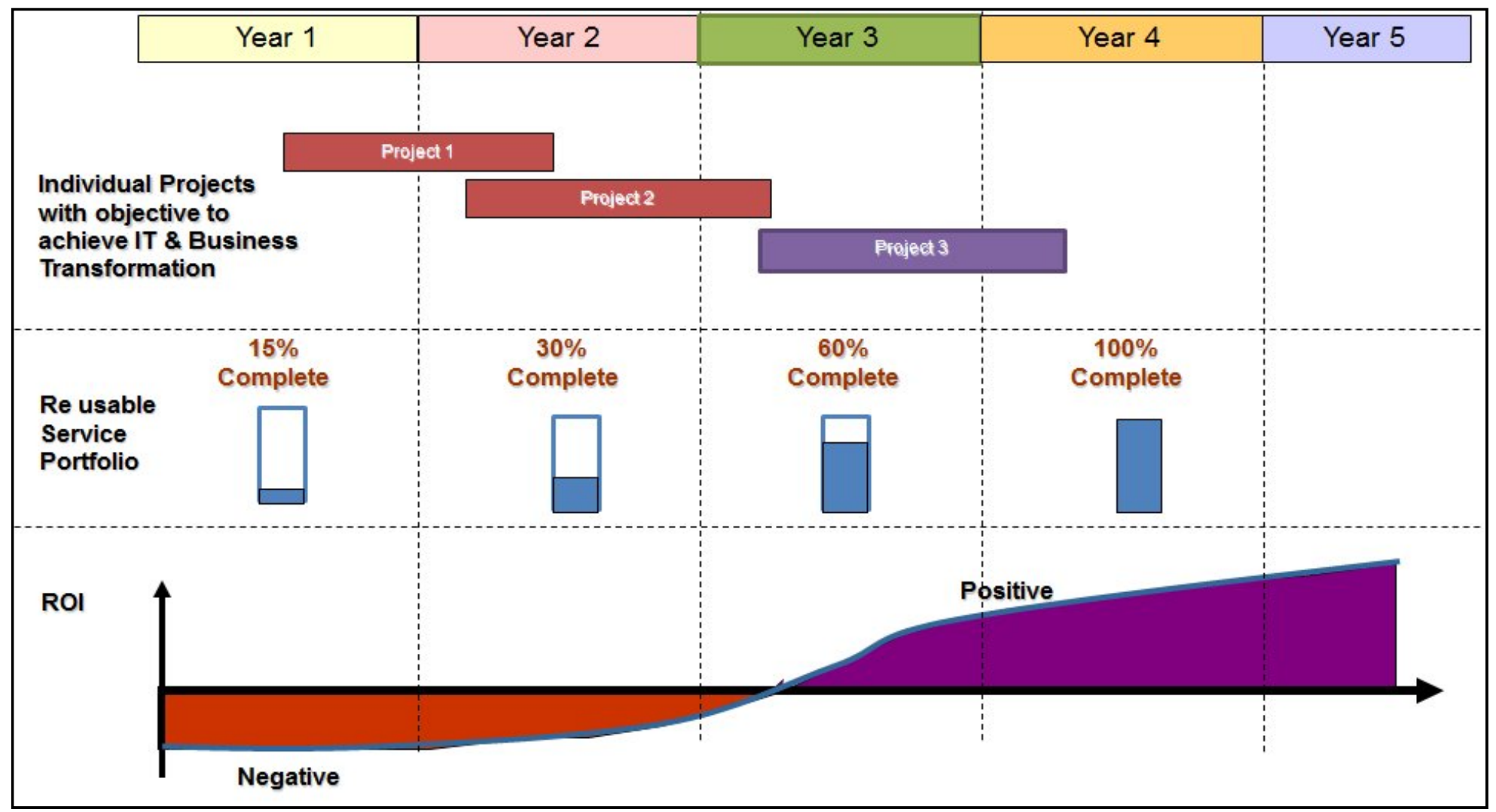


Maintenance Cost per interface: P2P vs SOA



Total Cost Comparison: P2P vs. SOA





- **Reduction in Integration Cost over time**
 - Over 15 interfaces → Development Cost for SOA less than P2P
 - Over 14 interfaces → Maintenance Cost for SOA less than P2P
 - Over 16 interfaces → Total Cost of Ownership for SOA less than P2P
- **2 to 2.5 year ROI → Utility will save hard-dollars if they do a Strategic IT investment**
- **Increased Business Agility**

- **Business Benefit**
 - Lower Business Risk
 - Increased Asset Use
 - Business Enabler
- **Customer Benefits**
 - More Satisfied Customers Due to Business Agility & Integrated data provides instant customer resolution
 - Self Service billing usage, outage status
- **Technical Benefits**
 - Simplified and Unified Integration
 - Low technical risk

Q&A

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