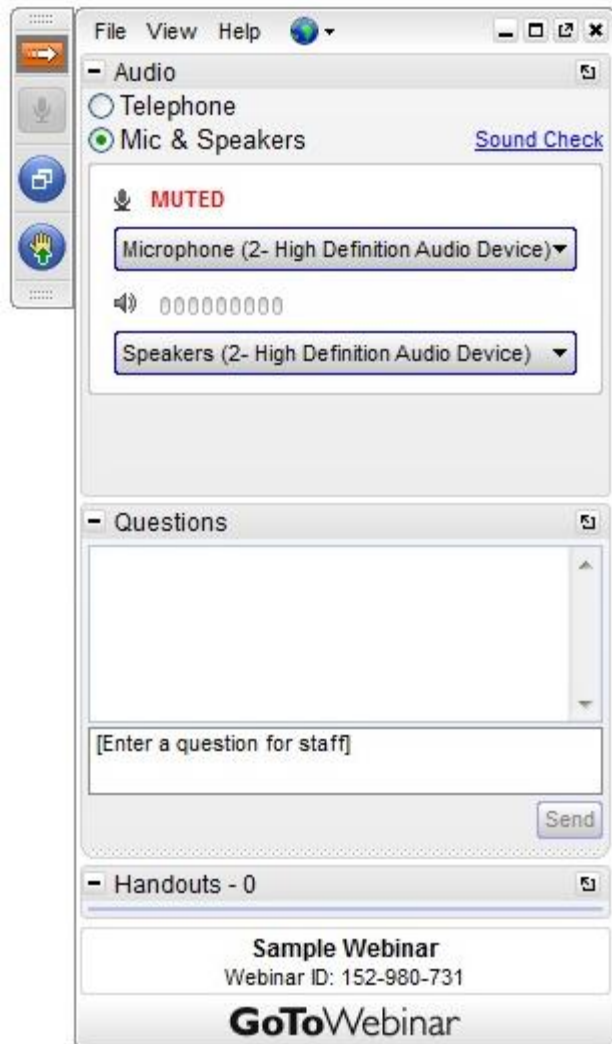# SENTURUS

Great BI: It's Not About the Tools!

How to Lead Your Team to BI Success

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Presentation Slide Deck

Agenda

- Introductions
- How to structure your BI project around **ideas**, not **tools**
- Senturus overview
- Additional resources
- Q&A and wrap-up

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Introducing...Today's Presenters

Shawn Alpay
BI Architect
Senturus, Inc.

Michael Weinhauer
Practice Area Director /
Solutions Architect
Senturus, Inc.

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Great BI: It's Not About the Tools!

Good business intelligence is hard

- "70-80% of Business Intelligence projects fail."—Gartner, 2011

- In my experience, these failures are due to bad **decisions**, not bad **technology**

- There are often many "right" ways to do something in BI, but only true thought leadership will yield the "best" way

What we'll cover (and what we won't!)

Business Intelligence Project Phases

Requirements → Solution Architecture → Data Model Design → Semantic Model Design → Visual Design → Development → Validation → Rollout
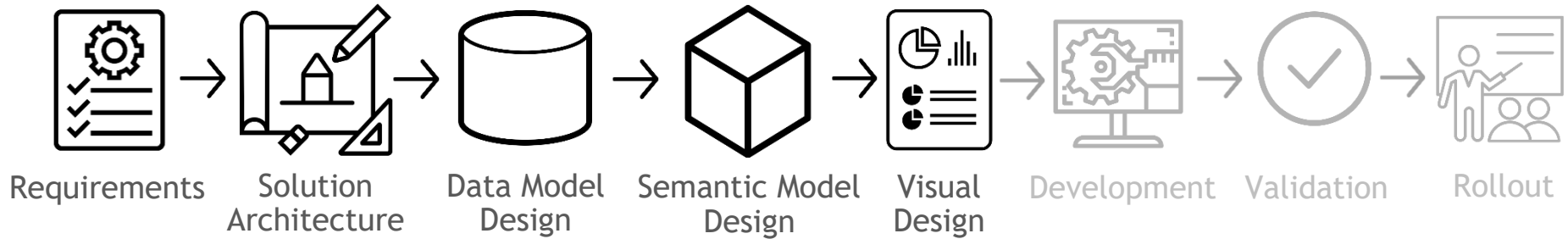
Supporting Structures
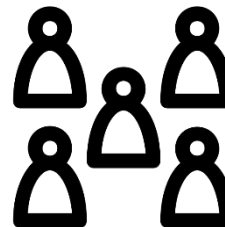
Documentation · Governance · People · Technology

Where does your organization need better thought leadership?

Requirements

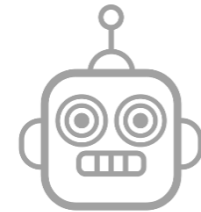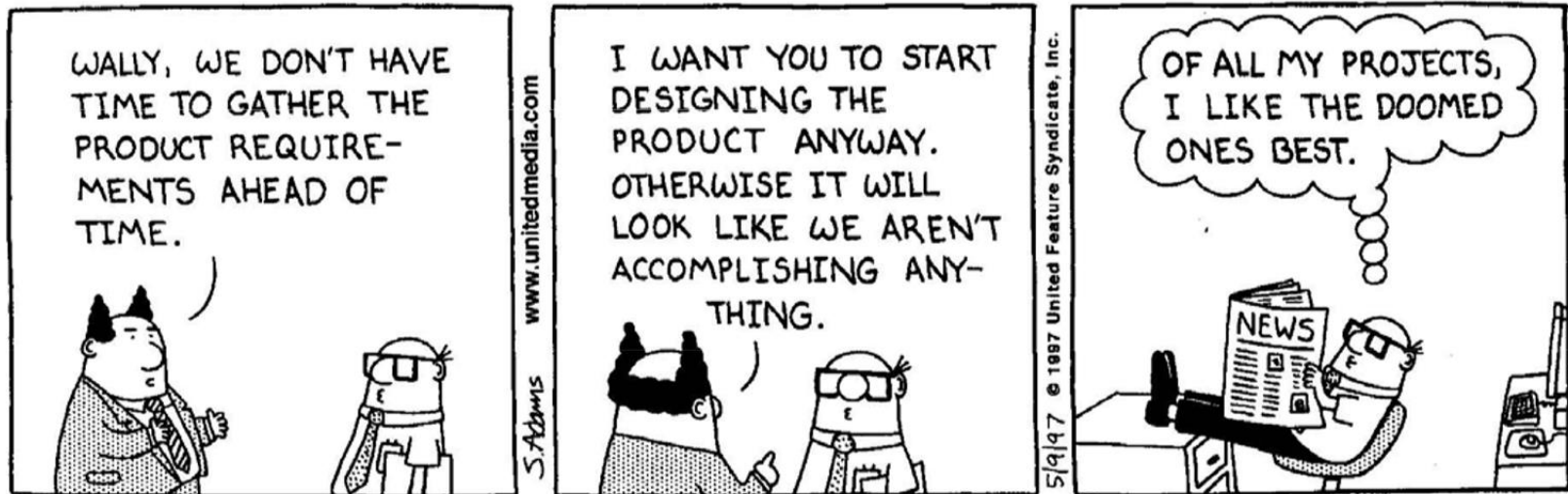- "80% of project failures can be traced back to the scope definition process."—AMA Briefing

- We need to clearly communicate WHY we're building a solution – and WHAT it's supposed to do – on paper

- People are often willing to jump into design without requirements – both management and designers

Requirements

Business Requirements Document (BRD)

- What does it describe?
  - The current lay of the land: **what** are the business processes we want to capture, and **why**?
  - Functional requirements: "System shall **do** X"
    - Data and use cases
  - Non-functional requirements: "System shall **be** Y"
    - Security, cost, availability, etc

- A BRD is a **business** solution document, and it does not try to determine the **technical** solution

- In my experience, this document is often not detailed enough (if it exists at all!), and more questions must be asked in order to start architecture and design

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Requirements

Data is king!

Even though data modeling comes later, it informs every phase of our project – so involve it as soon as possible!

Requirements

Bus Matrix

- What are the business processes we will measure, and how can we categorize them?

- High level! We'll refine this later

Business Process	Date	Location	Employee	Customer	Product	Discount Type	Payment Type	Ingredient	Vendor	Delivery Type	Cost Center	G/L Account
Sales	x	x	x	x	x					x		
Discounts	x	x	x	x	x	x				x		
Payments	x	x	x	x			x			x		
Inventories	x	x	x					x		x		
Deliveries	x	x						x	x	x		
General Ledger	x	x								x	x	

Sample bus matrix for a restaurant chain

Architecture and Design

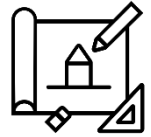- Imagine building a house without a plan (or the people who will live in it, or the people who will build it)!

- **"Every day I spend designing is three days I save developing"**—Monte Hansen, my first BI mentor
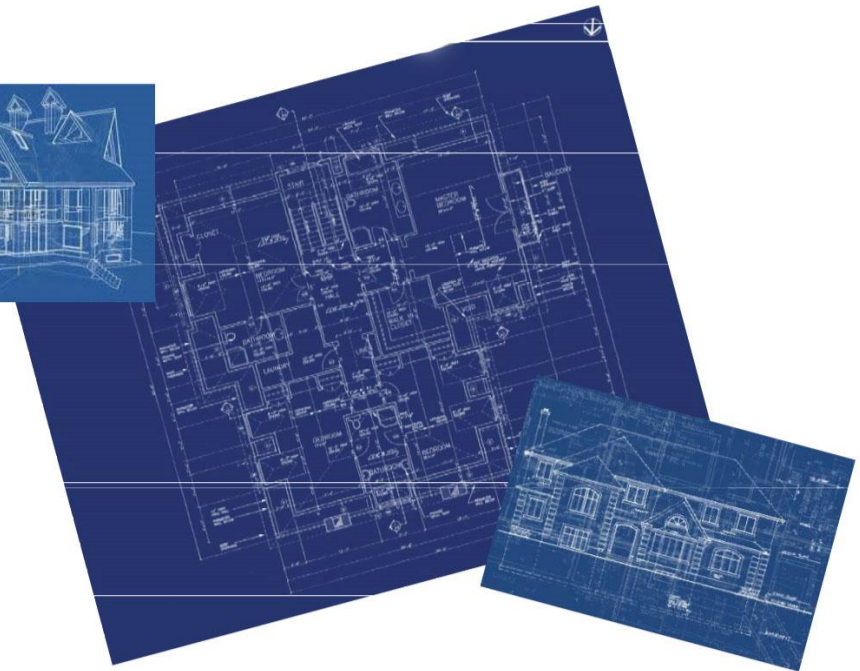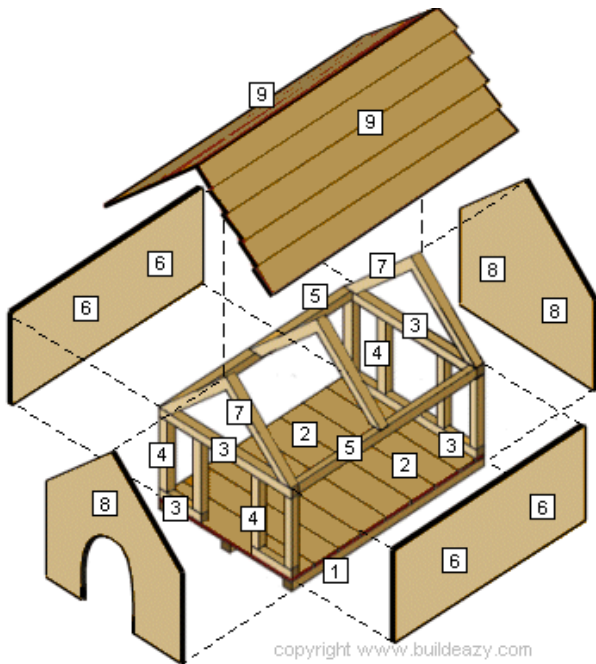
Solution Architecture

Architecture Summary

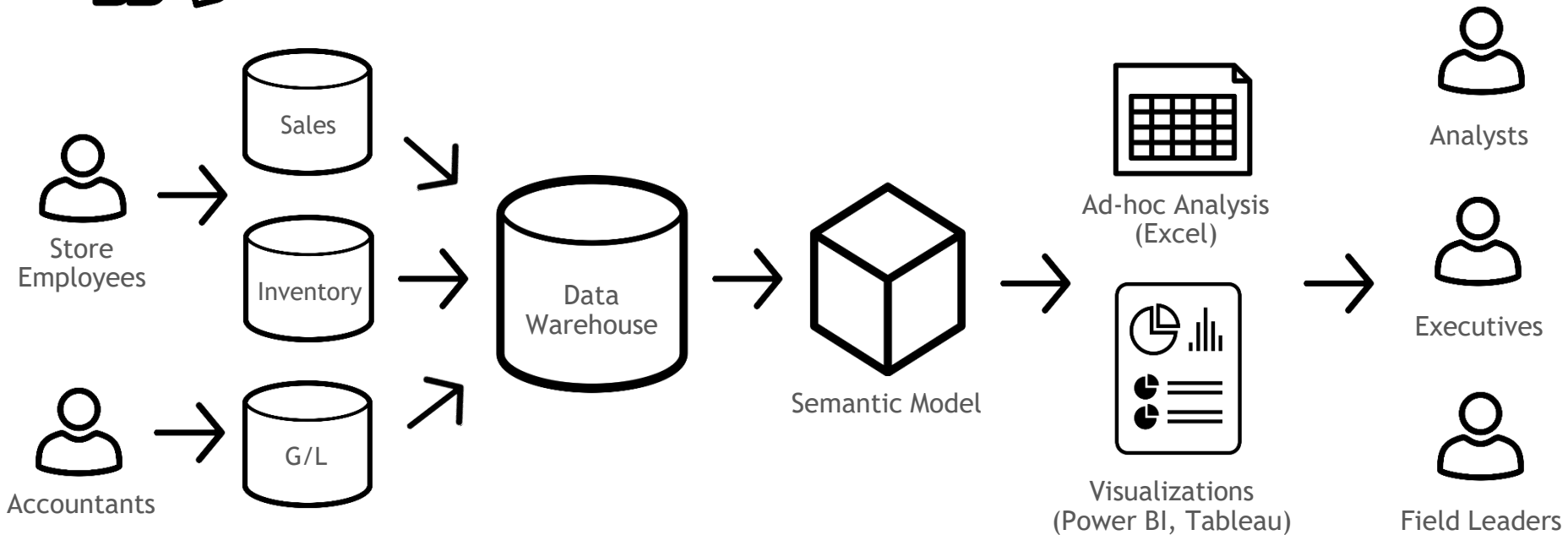- The BRD told us the *business* solution, and we need to communicate the *technical* solution

- Address all requirements and use cases provided and recorded by the business

- This should be written in English!

Solution Architecture

Data Flow Diagram

- High-level illustration that shows components from a DATA/USER perspective, not a PLATFORM perspective (aka the WHAT rather than the HOW)
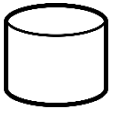
Solution Architecture

Topology Diagram

- Technical version of the data flow diagram: describes the HOW, WHEN, WHERE
  - All servers involved (e.g. DW is clustered with two nodes)
  - Names, IP addresses, data refresh cadence
  - Delineates between cloud and on-prem
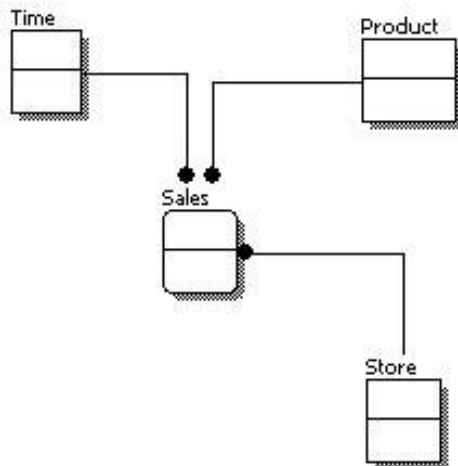 - One diagram per environment (Dev, QA, Prod, etc)
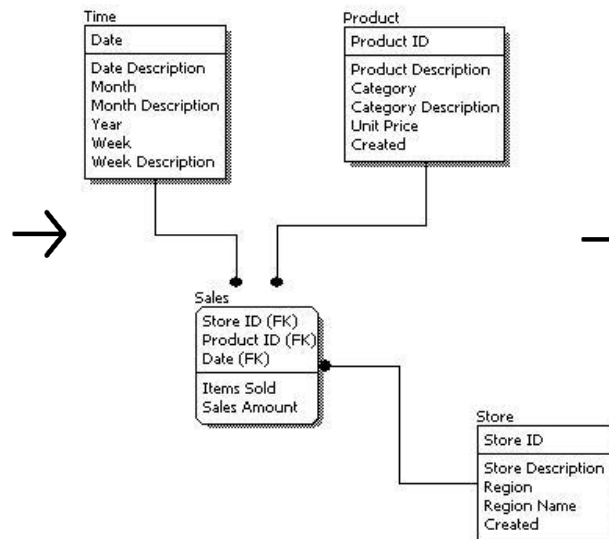
Data modeling

Bus Matrix

Business Process	Date	Location	Employee	Customer	Product	Discount Type	Payment Type	Ingredient	Vendor	Delivery Type	Cost Center	G/L Account
Sales	x	x	x	x	x						x	
Discounts	x	x	x	x	x	x					x	
Payments	x	x	x	x			x				x	
Inventories	x	x	x					x			x	
Deliveries	x	x							x	x	x	
General Ledger	x	x									x	x

↓

Feature	Conceptual	Logical	Physical
Entity Names	✓	✓	
Entity Relationships	✓	✓	
Attributes		✓	
Primary Keys		✓	✓
Foreign Keys		✓	✓
Table Names			✓
Column Names			✓
Column Data Types			✓

Conceptual

Logical

Physical

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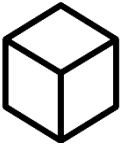
Semantic modeling

- Metadata layer: measure definitions, business-friendly names, English descriptions of all attributes, etc
  - In the past, we might have called this a "cube"

- Business logic CAN be captured here (or in the reports downstream), but it should be pushed as far upstream as possible
  - ...But there are plenty of reasons why this might not be best

- Design example: where to define Net Sales?

Visualizations

Semantic Model

Data Warehouse Model

18
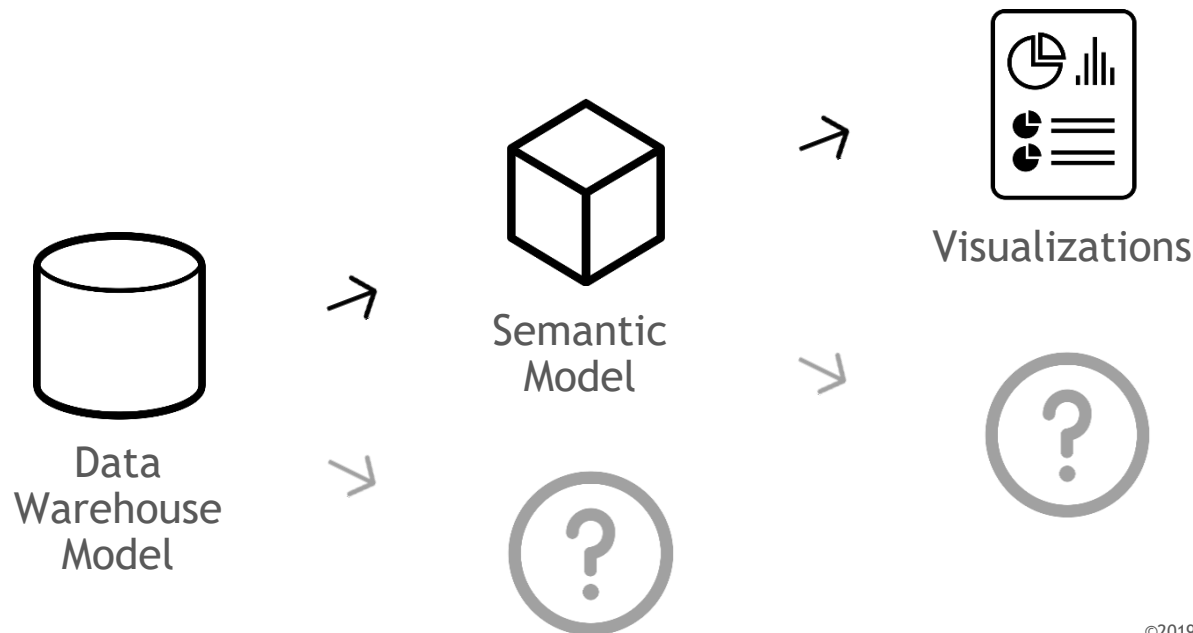
Visualizations

- If we did everything else right, this is the easy part
- But without good design, all that work upstream is wasted

VINTAGE GERMAN TUBE MICROPHONE
$12,000

VINTAGE BRITISH CLASS·A MIC PRE
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VINTAGE TUBE COMPRESSOR
$35,000

DIGITAL CONVERTERS
$10,000

COMPUTER WITH PRO TOOLS HD
$20,000

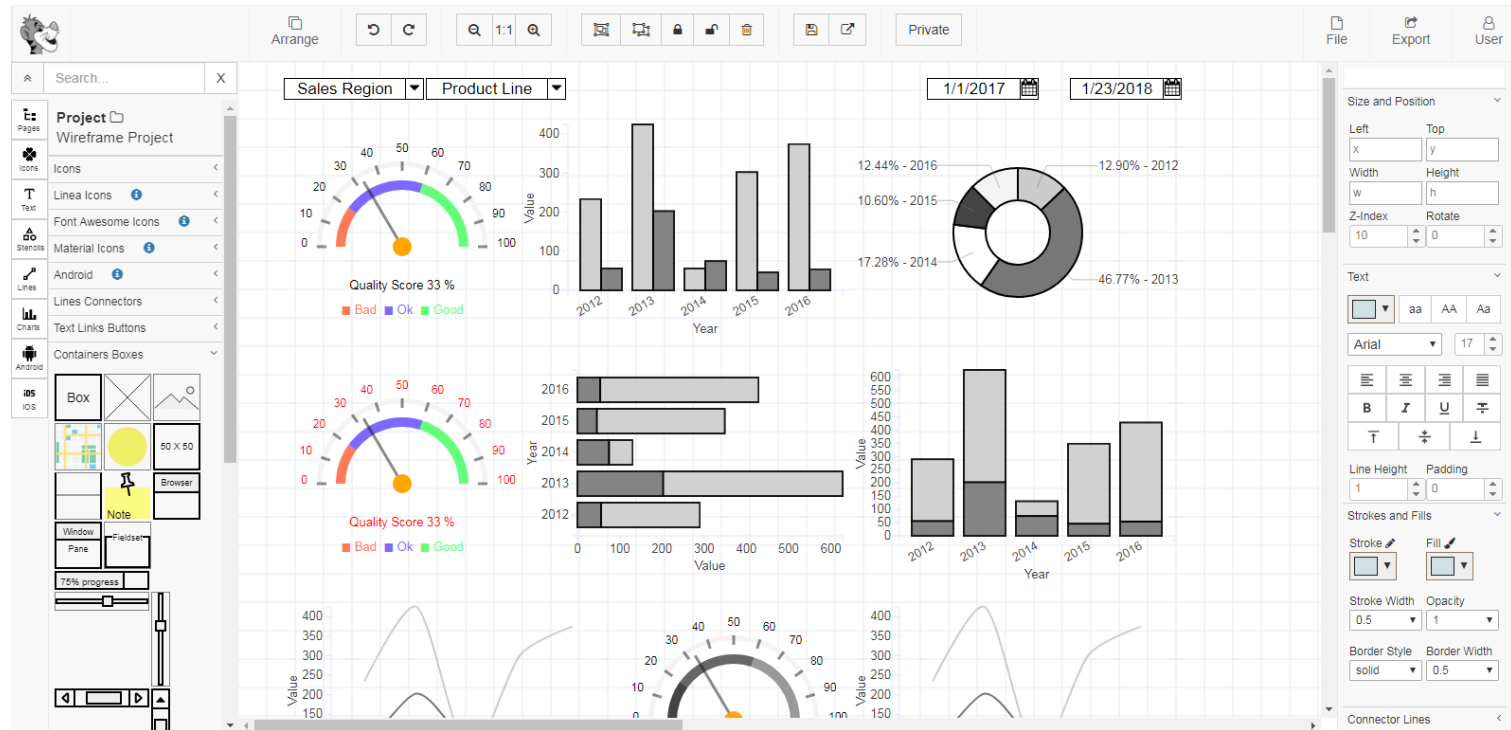VINTAGE BRITISH CLASS·A MIXING CONSOLE
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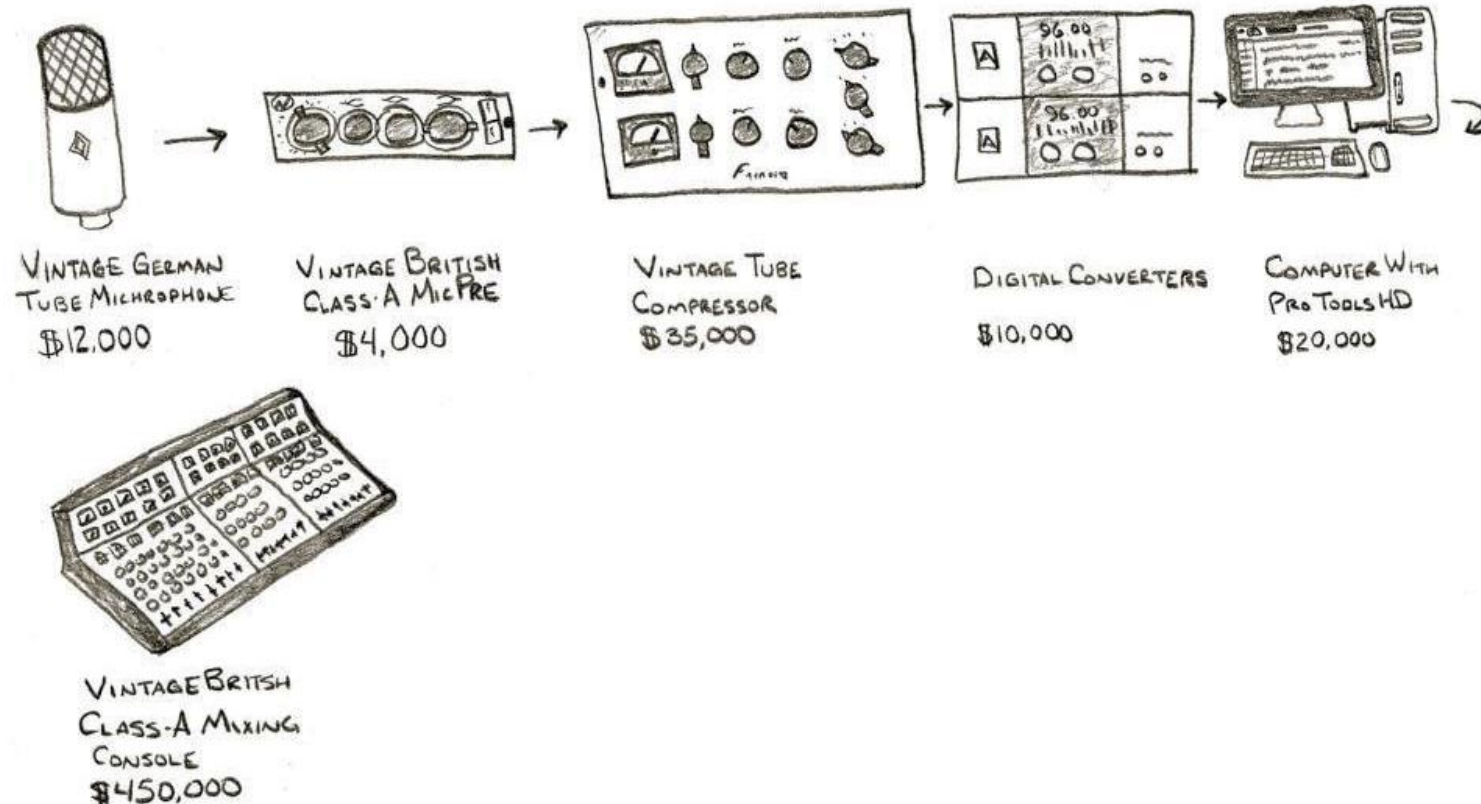
Visualizations

Mockups / Wireframes

- These can be drawn up without access to data and technology (although, yes, technology will inform what we can/can't do)

Visualizations

Style guidelines

Data Governance

- Framework for managing corporate data

- Why should I care about it?
  - Data is messy because humans are messy!
  - Example: product in forecast system but not in sales system
  - Example: how do we want to categorize products?

- What does it do?
  - Establishes the business as data **owners** and IT as data **stewards**
  - Establishes data issues as cross-functional: these issues are **everyone's** problem to solve

- Governance is a **process**, not a **platform**

- Don't let process be a roadblock to progress
  - "Garbage in, garbage out": showing everyone the problem is sometimes the only way to kickstart solving it

Data Governance Teams (for $2B company)

Executive Steering Committee
CULTURE
~5 Executives / SVP's

Data Governance Committee
STRATEGY
~12 VP's / Directors

Project Team
EXECUTION
~15 IT members

Business User Advisory Teams
TACTICS
**~30 individual contributors
(in small groups)**

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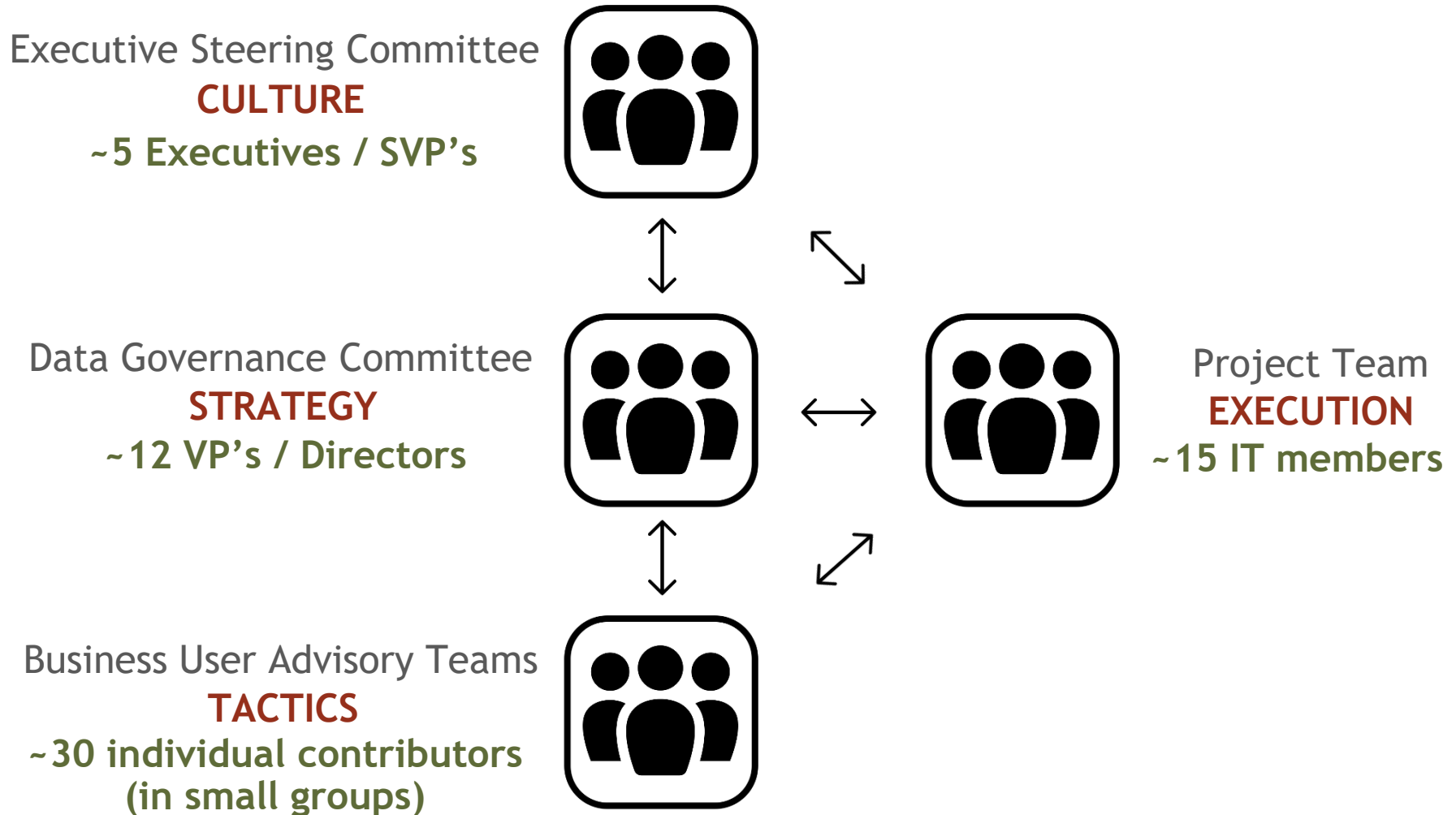
People

"No matter how it looks at first,
it's always a people problem"
—The Secrets of Consulting, Gerald Weinberg
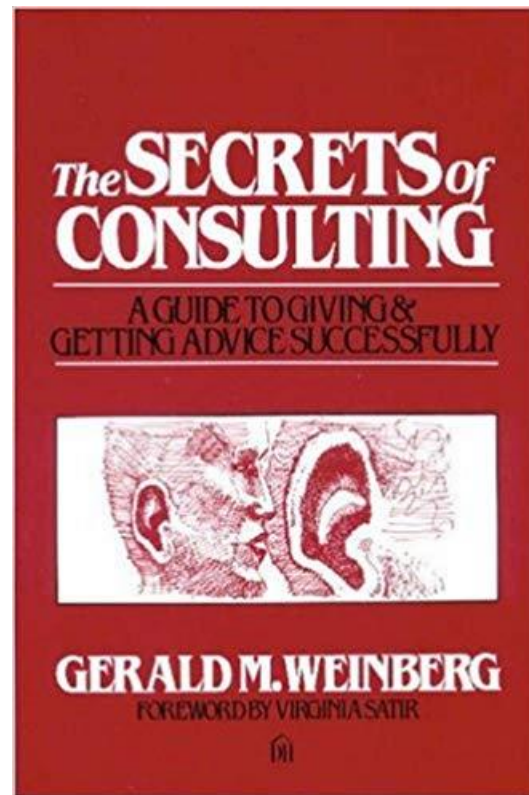
People

Project team roles

	Business	Application	Information/ Data	Technology
Contextual		Enterprise Architect		
Conceptual	Business Architect	Solution Architect	Information Architect	Technology Architect
Logical	Business Analyst	Software Architect		
Physical				
Implementation	QA	Software Developer	Database Developer	System Administrator Devops
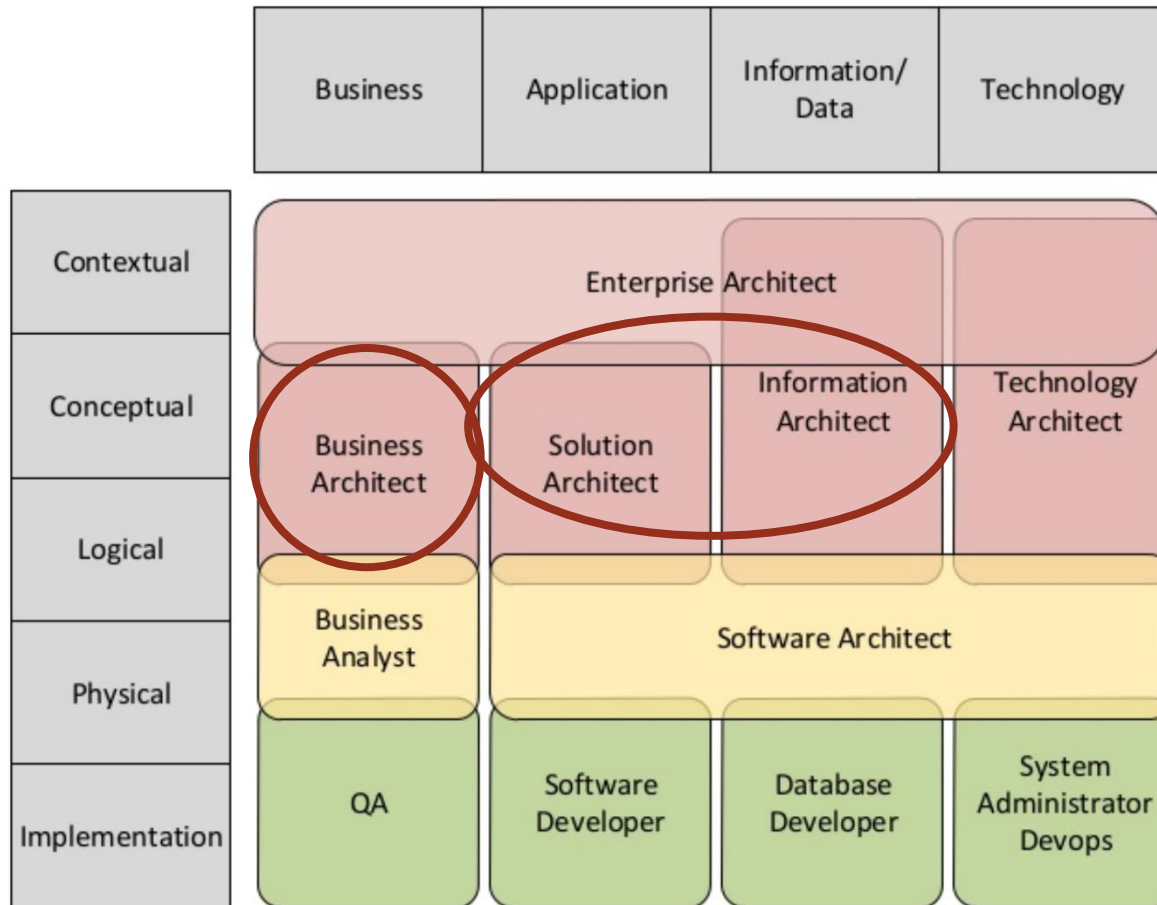
Depending on the size of the project, I may serve in multiple roles – but I always think of the roles **separately**

People

Responsibility assignment matrix

	Jeff	Michael	Reto	YOU	Alex	Anna	Bill	Cindy	Felix	Fred	Hans	John	Livio	Luc	Marco	Paul	Peter	Sue	Ted	Tim
Planning / Schedule	R	A	I	C					C											Q
Risk Management		I	I	Q						A								R		
Quality Management			R	C						R										A
Procurement				R		Q				R								R		A
1. Specifications Listing								A		R								R		R
2. Site Requirements		C	A	R	Q						R									
3. Call for Tenders				Q	A	R	C				R							R		
4. Budget Approval			A	Q						R							R			R
5. Contract Negotiations			A		Q	R	R											R		

- Who's doing what??
  - **R**esponsible, **A**ccountable, **C**onsulted, **I**nformed, (**Q**uality Reviewer)
- If the team is big enough, you can list groups/committees also
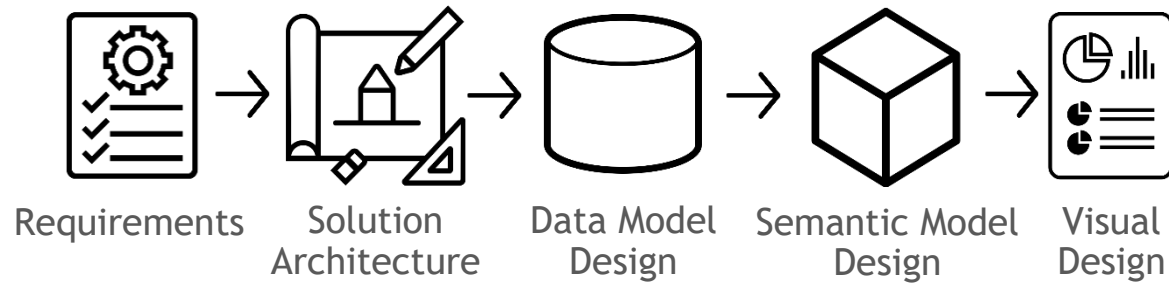
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People

- Who are your thought leaders? Do you have the right people in place to:
    - Implement these ideas?
    - Provide guidance and dedication when things get hard?
    - Fight for ideas they believe in?
- Business intelligence is much more of an art than a science… and you need artists on your team

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Where could your team change things?

Business Intelligence Project Phases

Requirements → Solution Architecture → Data Model Design → Semantic Model Design → Visual Design

Supporting Structures

Documentation   Governance   People

Questions? Write me!

salpay@senturus.com

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WHO WE ARE

Business Analytics Consultants

Bridging the Gap Between Data & Decision Making

Business Analytics Architects

- Dashboards, Reporting & Visualizations

- Data Preparation & Modern Data Warehousing

- Self-Service Business Analytics

- Salesforce Reporting

- Big Data & Advanced Analytics

- Planning & Forecasting Systems

- Proprietary Analytics Connector Software

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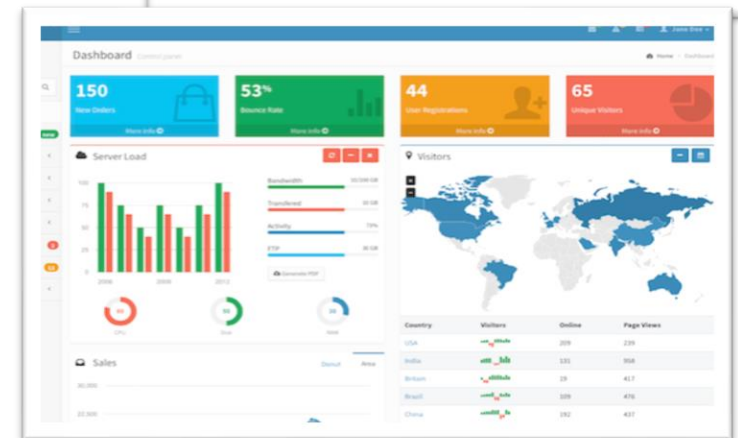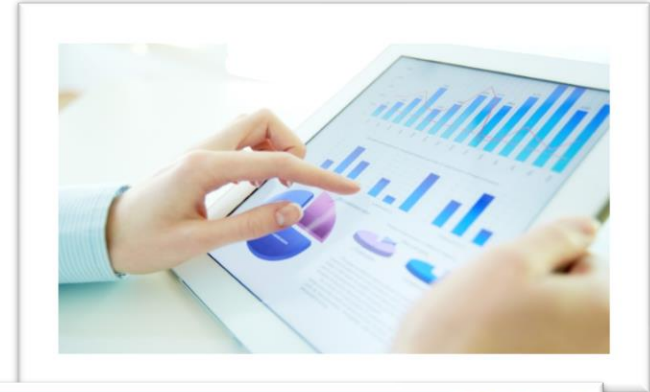
1200+ Clients, 2000+ Projects, 18+ Years

ADDITIONAL RESOURCES

Upcoming Events

www.senturus.com/events

A COMPARISON OF POWER BI, TABLEAU & COGNOS

DIFFERENTIATORS DEMO'D

Thursday, February 28, 2019 - 11am PT (2pm ET) - 60 minutes

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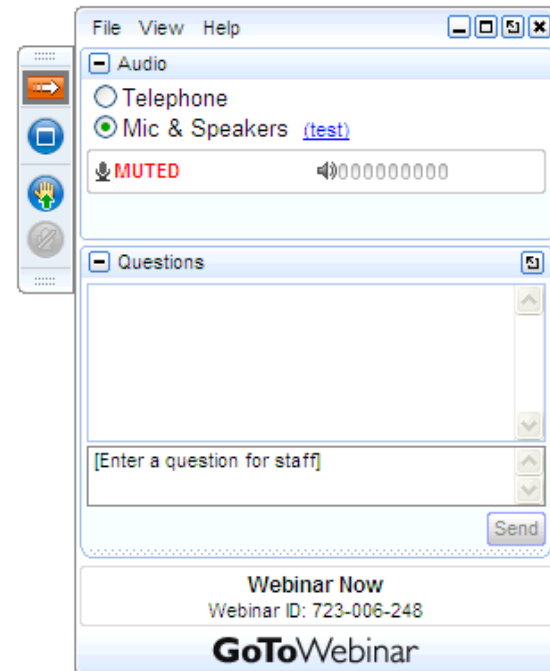
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Q&A and Wrap-up

If your question or issue is broader than what can be answered today, contact us at

info@senturus.com

and we will set up a free consultation.

Thank You!

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