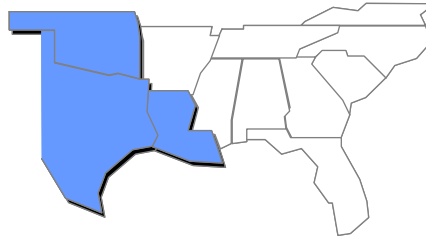


Honeywell Building Solutions

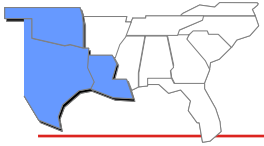


Technology

“The Cost Mystery”

Stan Byers -Technology Business Development Leader

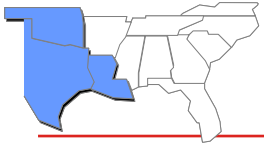
January 21, 2011



Objectives

Honeywell

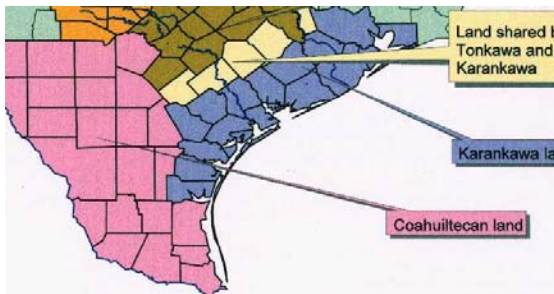
- The Motive
- Understand the Broad Considerations of a Technology Implementation
- Understand the Basics of encompassing Cost Evaluations
- Understand how to build the Foundation of a Sustainable Strategy



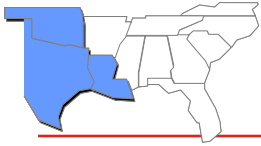
Coahuiltecan Indians?

- **5 Minutes**

- Precontact / Post Contact
- Population
- No TribesBands
- Allies and Enemies
- Diet
- Living Quarters
- Clothing
- Technology



All in 5 minutes!



Information the New Narcotic

Honeywell

How Many?

How Much?

How Long?

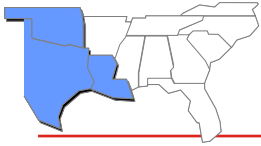
How Much More?

What if This?

What if That?

If I had This I could accomplish That!

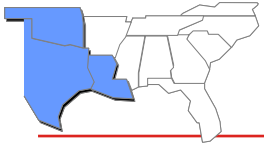
How do you know?



Capturing and Using Information

Honeywell

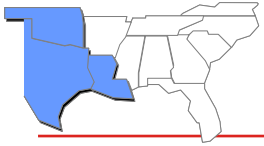
- **Start Today**
- **Start Yesterday**
- **How far in the Past?**
- **What data Relevant and to Whom?**
- **What are the Outcomes envisioned?**
- **What does the Future look like?**
- **How does the technology enable the coveted Outcomes?**



Project Activities

Honeywell

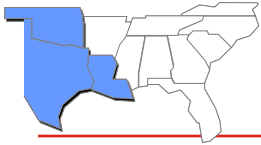
- **Software**
- **Infrastructure**
- **Implementation**
- **Training**
- **Updating**
- **Planning**
- **Hardware**
- **Scheduling**
- **Commissioning**
- **Licensing**



Internal Activities

Honeywell

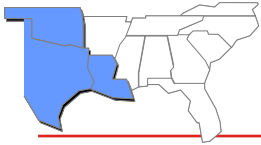
- **Requirements Definition**
 - **Key Stakeholder Consensus**
- **Project Assignment**
 - **Solution Definition**
- **Procurement Model**
 - **Budgeting**
- **Statement of Work**
 - **RFQ or RFP or Both**
- **Purchasing**
 - **Procurement**
- **Risk Assessment**



Now how do you understand the Costs?

Honeywell

- Technology deployments are notorious for cost overruns.
- Each task needs to be considered and accounted for.
- Project Management is undervalued – with good reason!
- Cost Management is reactive not proactive.
- Bias can cost a fortune.



It Sounds so Easy but then.....

Honeywell

- Technology deployments are notorious for cost overruns.
- Each task needs to be considered and accounted for.
- Project Management is undervalued – with good reason!
- Cost Management is reactive not proactive.
- Communication becomes a nuisance.
- Accountability becomes a “hot potato”

Early Expertise *is not optional*

Honeywell

PROS



- Precision Budgeting
- Single information Container
- Task Development
- Continuous Budget Alignment
- The Maxims

CONS



- Usually entails a cash outlay
- Everybody has to agree on Somebody

Evaluate Everything

Honeywell

PROS



- Manufacturers
- Vendors
- First Cost
- Reoccurring Costs
- Training Costs
- Scalability
- Licensing Models / Options



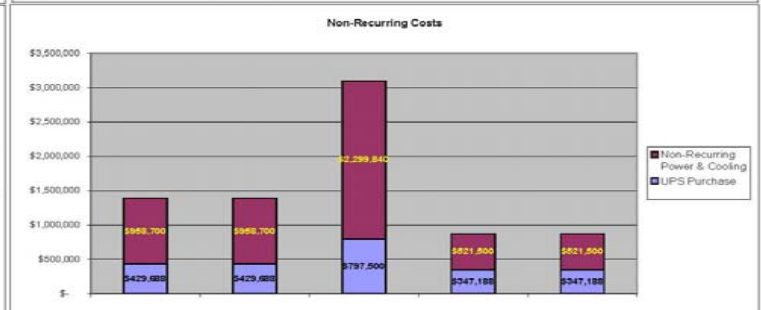
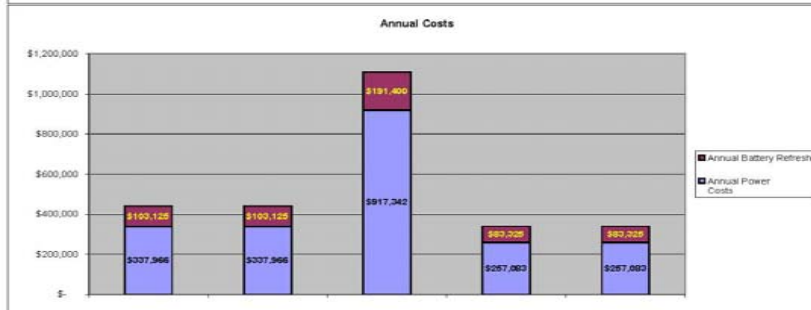
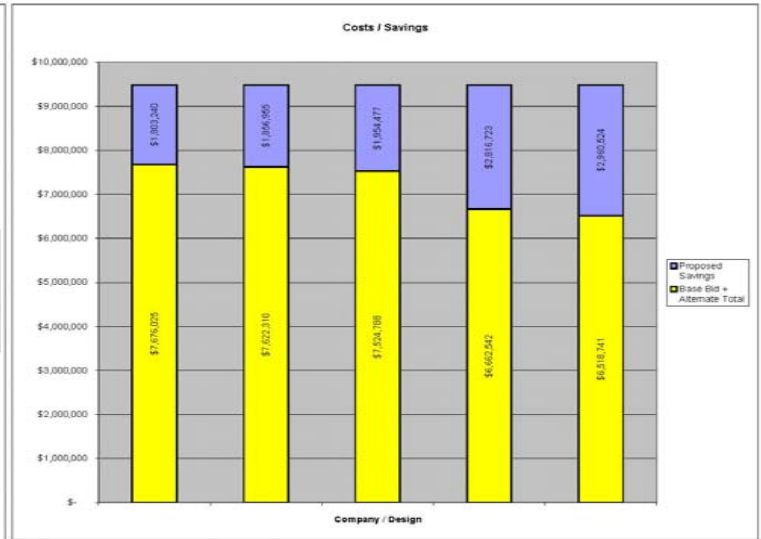
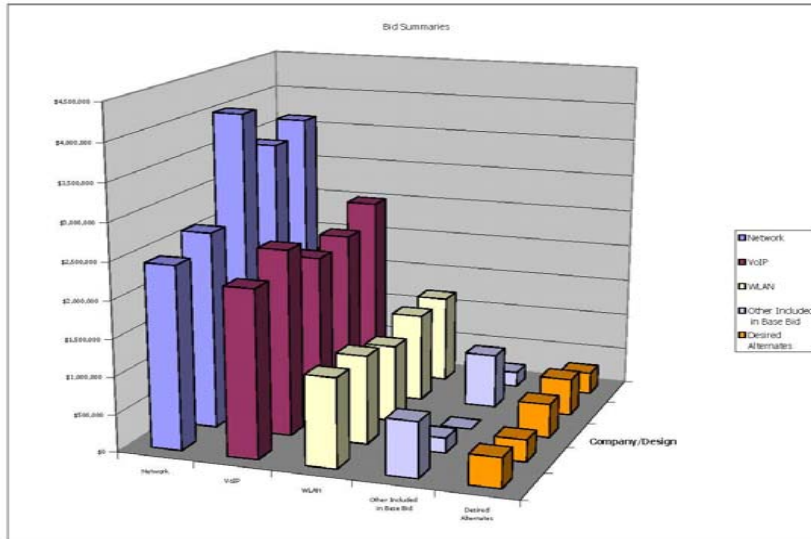
CONS

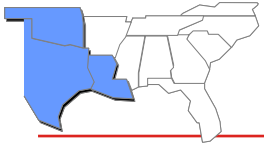
Evaluate Everything



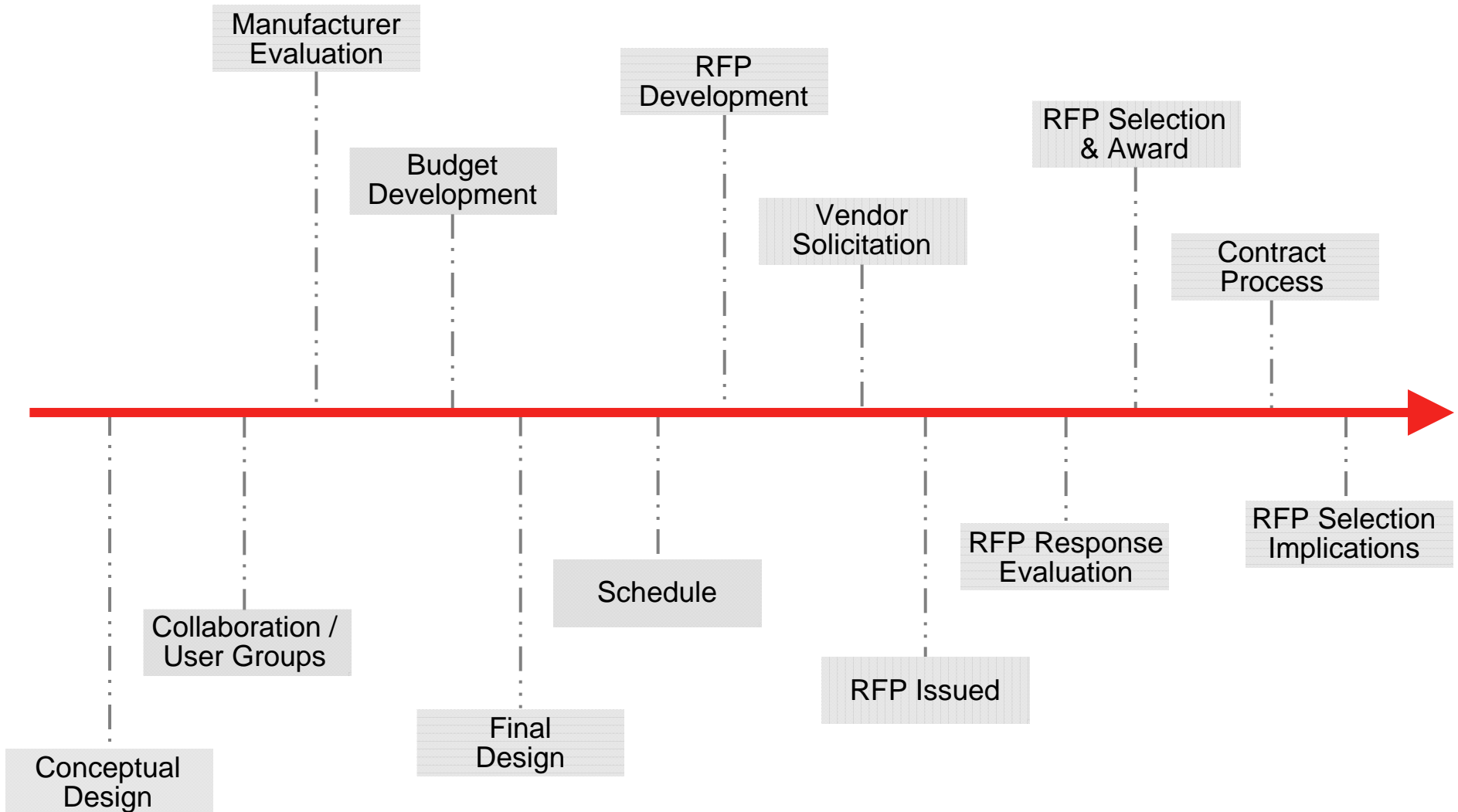
Budget \$ 9,479,265

All Bids \$ Ranking	Reliability	Performance	Company / Design	Base Bids			Payment/ Performance Bond	OCIP Deduct	Drug Test	Credit	Other Included in Base Bid	Desired Alternates	Base Bid + Alternate Total	Proposed Savings	10 year Average			Non-Recurring Power & Cooling
				Network	VoIP	WLAN									Annual Power Costs	Annual Battery Refresh	UPS Purchase	
10	High	Very Good		\$3,634,742	\$2,496,267	\$1,189,288	\$146,406	(\$8,227)	(\$500)	(\$278,245)	\$200,224	\$ 296,070	\$ 7,676,025	\$ 1,803,240	\$ 337,966	\$ 103,125	\$ 429,688	\$ 958,700
6	High	Very Good		\$3,444,722	\$2,235,456	\$1,193,838	\$188,177	(\$5,297)	(\$750)	(\$662,598)	\$731,342	\$ 497,419	\$ 7,622,310	\$ 1,856,955	\$ 337,966	\$ 103,125	\$ 429,688	\$ 958,700
5	High	Very Good		\$4,033,863	\$2,159,811	\$1,036,870	\$119,088	(\$973)	(\$625)	(\$277,477)	\$0	\$ 454,231	\$ 7,524,788	\$ 1,954,477	\$ 917,362	\$ 191,400	\$ 797,500	\$ 2,299,940
4	Good	Good		\$2,641,131	\$2,496,267	\$1,189,288	\$126,534	(\$8,227)	(\$500)	(\$278,245)	\$200,224	\$ 296,070	\$ 6,662,542	\$ 2,816,723	\$ 257,063	\$ 83,325	\$ 347,188	\$ 521,500
1	Good	Good		\$2,446,592	\$2,235,456	\$1,193,838	\$167,108	(\$5,279)	(\$750)	(\$662,598)	\$742,355	\$ 402,019	\$ 6,518,741	\$ 2,960,524	\$ 257,063	\$ 83,325	\$ 347,188	\$ 521,500





Traditional Timeline of Activities

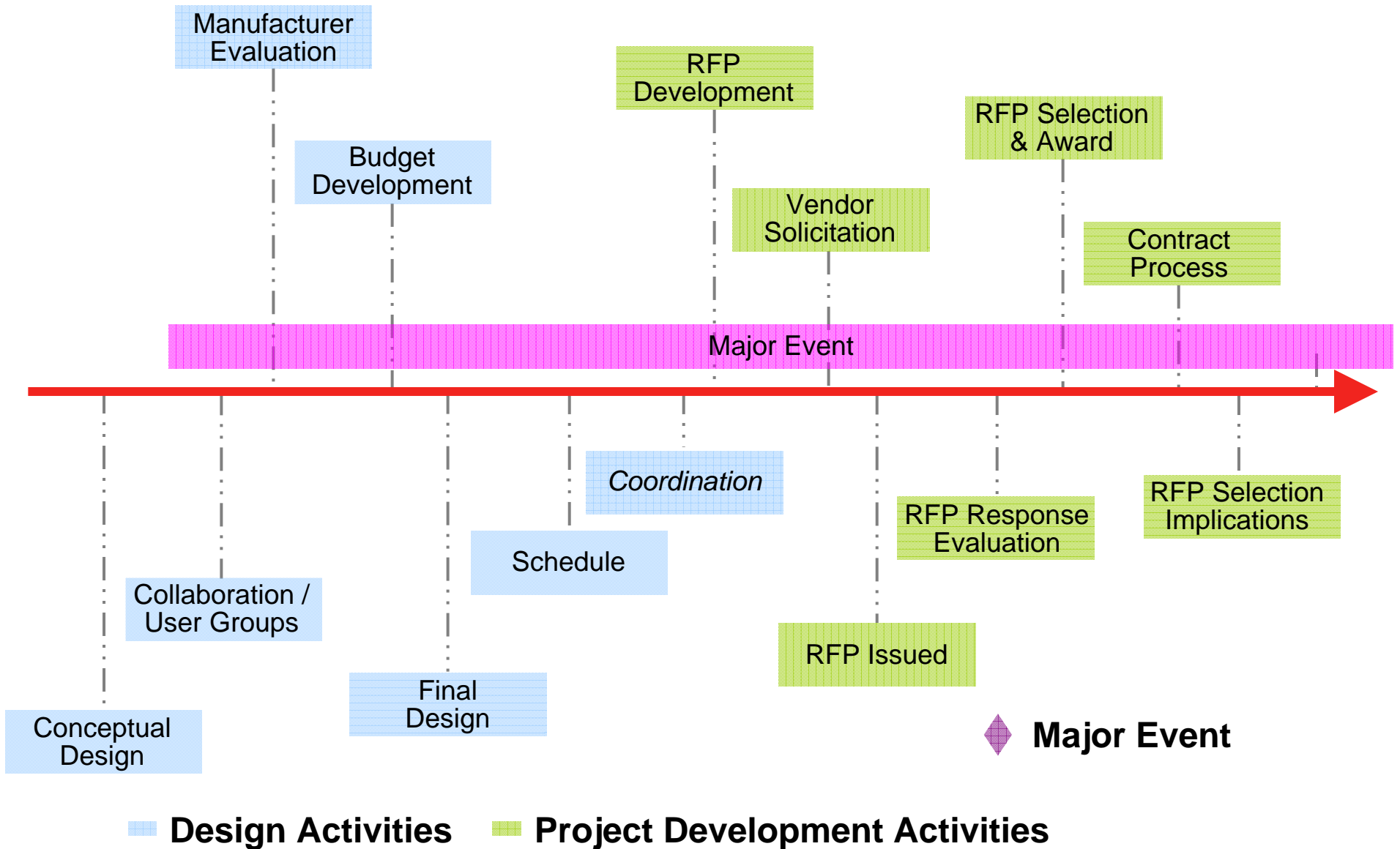


Successful Approach Method Attributes

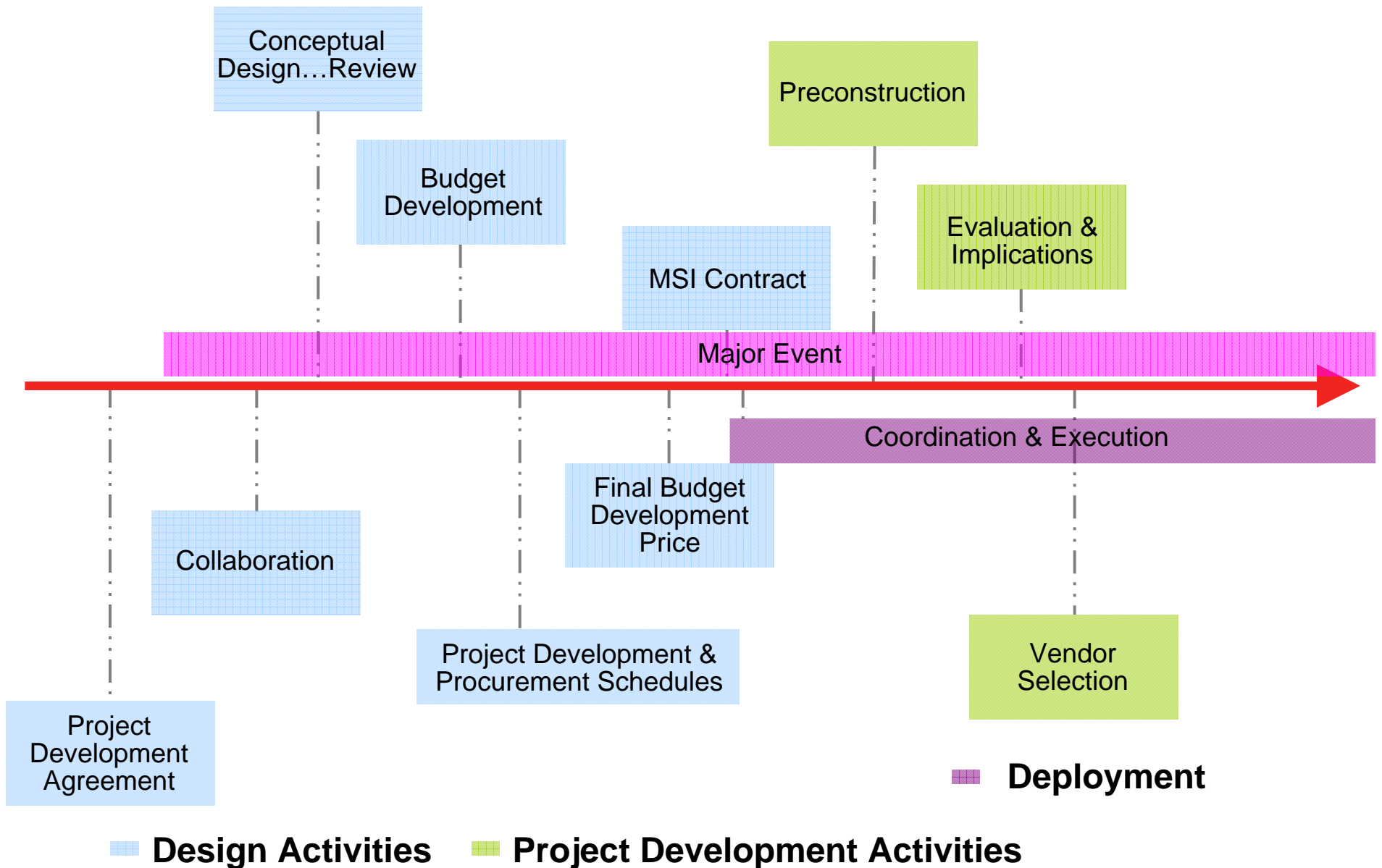
- **Owner driven** –
 - Internal departments such as IT & Facilities
 - A Planning Department
 - Assigned project resources
 - Possession of necessary skill sets.
- **Consultant driven** –
 - Expertise in desired technology
 - Expertise in project management and contract administration
 - Cultural match for Owner team

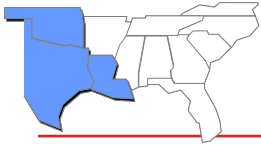
Across the entire effort, there must be clear identification of the tasks and responsibilities of each organization and team member.

Today's Typical Timeline of Activities



New Timeline with MSI Model





Better Delivery Attributes

Honeywell

PROS

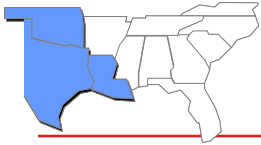


- Design-Assist Services
- Project Development Services
- Project Management Services
- Project Closeout & Post Project Services
- Open book pricing with a fee structure
- Vendor Independency
- Depth of resources
- Single point of responsibility
- Assured Value
- A partnership for success, not just the winning bidder of a system

CONS



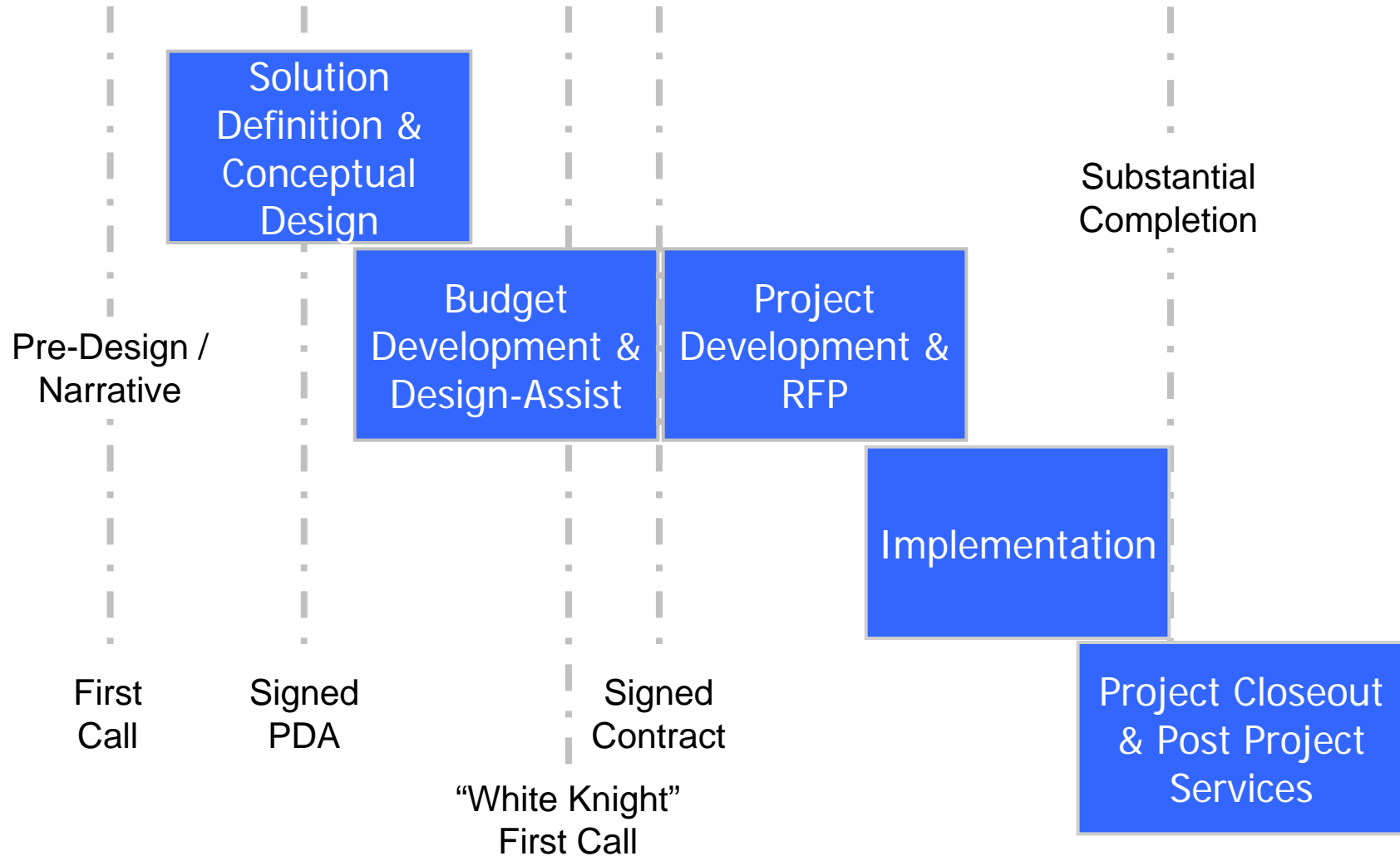
- Not the traditional method of delivery



Honeywell MSI Delivery

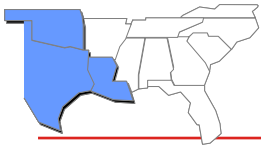
Honeywell

How Honeywell delivers technology in 5 distinct, but cohesive phases:

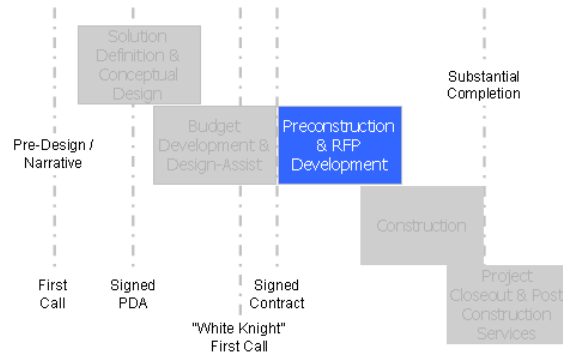


Why the new model is better

- ✓ Single Point of Responsibility
- ✓ Centralized Documentation Management
- ✓ Technology becomes part of the Major Event, bringing discipline to the implementations.
- ✓ Coordination is proactive, accomplished in the design and delivery phase of the project.
- ✓ Technology is accounted for in the project schedule.
- ✓ Communication concerning Technology becomes cohesive and efficient, without unnecessary “broadcasts” to all parties.
- ✓ Direct Liaison between Owner/Design Team/CM/GC/ Departments/ Vendors etc. concerning technology issues and solutions.



Delivery Process - Schedule

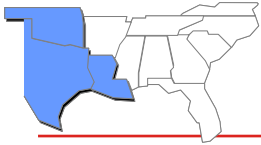


Project Development, RFP Development & Procurement Schedule

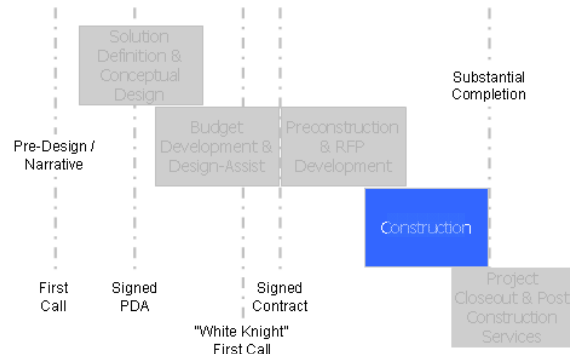
Project Development & Procurement Schedule

- Identifies the critical dates for design completion, manufacturer evaluation, vendor prequalification and RFP development to ensure the most current state technology is delivered without affecting the key implementation milestones.

ID	Task Name	Duration	Start	Finish	2nd Half												1st Half						2nd H																																																											
					Jul						Aug						Sep						Oct						Nov						Dec						Jan						Feb						Mar						Apr						May						Jun						Jul					
					Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Jul																																																			
57	Structured Cabling	586 days?	Mon 9/21/09	Mon 12/19/11	[Gantt bar spanning from Sep 2009 to Dec 2011]																																																																													
58																																																																																		
59	Interior Construction	452 days?	Fri 3/26/10	Mon 12/19/11	[Gantt bar from Mar 2010 to Dec 2011]																																																																													
60	Technology Preconstruction	90 days	Mon 9/21/09	Fri 1/22/10	[Gantt bar from Sep 2009 to Jan 2010]																																																																													
61	Construction and FFE Budget	60 days	Mon 9/21/09	Fri 12/11/09	[Gantt bar from Sep 2009 to Dec 2009]																																																																													
62																																																																																		
63	Budget	5 days	Mon 12/14/09	Fri 12/18/09	[Gantt bar from Dec 14, 2009 to Dec 18, 2009]																																																																													
64	Division 27 Specifications and Drawings	30 days	Mon 12/21/09	Fri 1/29/10	[Gantt bar from Dec 21, 2009 to Jan 29, 2010]																																																																													
65	Contractor/Vendor Prequalification	10 days	Mon 2/1/10	Fri 2/12/10	[Gantt bar from Feb 1, 2010 to Feb 12, 2010]																																																																													
66	Division 27 Package to Bid	20 days	Mon 2/15/10	Fri 3/12/10	[Gantt bar from Feb 15, 2010 to Mar 12, 2010]																																																																													
67	Division 27 Bid Period	22 days	Mon 3/15/10	Tue 4/13/10	[Gantt bar from Mar 15, 2010 to Apr 13, 2010]																																																																													
68	Division 27 Contractor Selected	10 days	Wed 4/14/10	Tue 4/27/10	[Gantt bar from Apr 14, 2010 to Apr 27, 2010]																																																																													
69	Structured Cabling Plant Start	400 days	Wed 5/26/10	Tue 12/6/11	[Gantt bar from May 26, 2010 to Dec 6, 2011]																																																																													



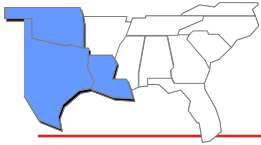
Delivery Process



Implementation – Comprehensive Technology Schedule developed and managed based on the project milestones and tasks

- Brings project structure to the technology implementations
- Identifies key milestones that are crucial to the technology implementation critical paths
- Reduces late cycle change orders
- Integrates the technology systems into the commissioning plan.

WBS	Task Name	% Comp	Start	Finish	Finish Variance								
						September			October				
						8/28	9/4	9/11	9/18	9/25	10/2	10/9	10/16
5.3	Floor 2	52%	9/2/2005	12/21/2006	88.06d								
5.3.1	IDF A	51%	12/19/2005	12/7/2006	149.26d								
5.3.1.1	Key Interface Milestones	0%	12/19/2005	11/13/2006	134d								
5.3.1.1.1	IDF Room Finishes Complete	100%	1/10/2006	1/10/2006	6d								
5.3.1.1.2	Raceway Systems Complete	100%	12/19/2005	12/19/2005	42d								
5.3.1.1.3	Conduit Drops, Sleeves Complete	100%	2/3/2006	2/3/2006	89d								
5.3.1.1.4	Door Hardware Installed	100%	7/6/2006	7/6/2006	143d								
5.3.1.1.5	Wall Finishes	100%	8/14/2006	8/14/2006	73d								
5.3.1.1.6	Patient Room Headwall Complete	100%	8/14/2006	8/14/2006	68d								
5.3.1.1.7	Permanent Power Established	0%	11/13/2006	11/13/2006	226d								
5.3.1.2	Infrastructure	97%	2/6/2006	12/4/2006	147.73d								
5.3.1.2.1	Riser	0%	12/1/2006	12/4/2006	147.73d								
5.3.1.2.2	Frame Build	100%	2/28/2006	4/14/2006	67.63d								
5.3.1.2.3	Horizontal	100%	2/6/2006	4/19/2006	73.58d								
5.3.1.3	Station Termination	0%	6/19/2006	11/21/2006	154d								
5.3.1.3.1	Structured Cable Devices & Termination	100%	6/26/2006	6/26/2006	48.88d								
5.3.1.3.2	Nurse Call Devices and terminations	0%	6/19/2006	11/21/2006	154d								
5.3.1.4	IDF Termination	55%	4/24/2006	12/5/2006	148.24d								
5.3.1.4.1	Copper Riser Termination	0%	12/4/2006	12/4/2006	147.73d								
5.3.1.4.2	Fiber Riser Termination	0%	12/4/2006	12/5/2006	148.24d								
5.3.1.4.3	Structured Cable Termination	100%	4/24/2006	9/15/2006	105.94d								
5.3.1.4.4	Nurse Call	100%	9/6/2006	10/10/2006	192.63d								



In Summary - The Maxims

Honeywell

Know What's Going On
Report Significant Change
Do Something

- Planning: There is no substitute for the Schedules
- Communication and Transparency
- Continuous Alignment
- The Finish

Thank You