



# RPU Strategic Technology Road

**Presented by:** Steven S. Rupp

June 26, 2015

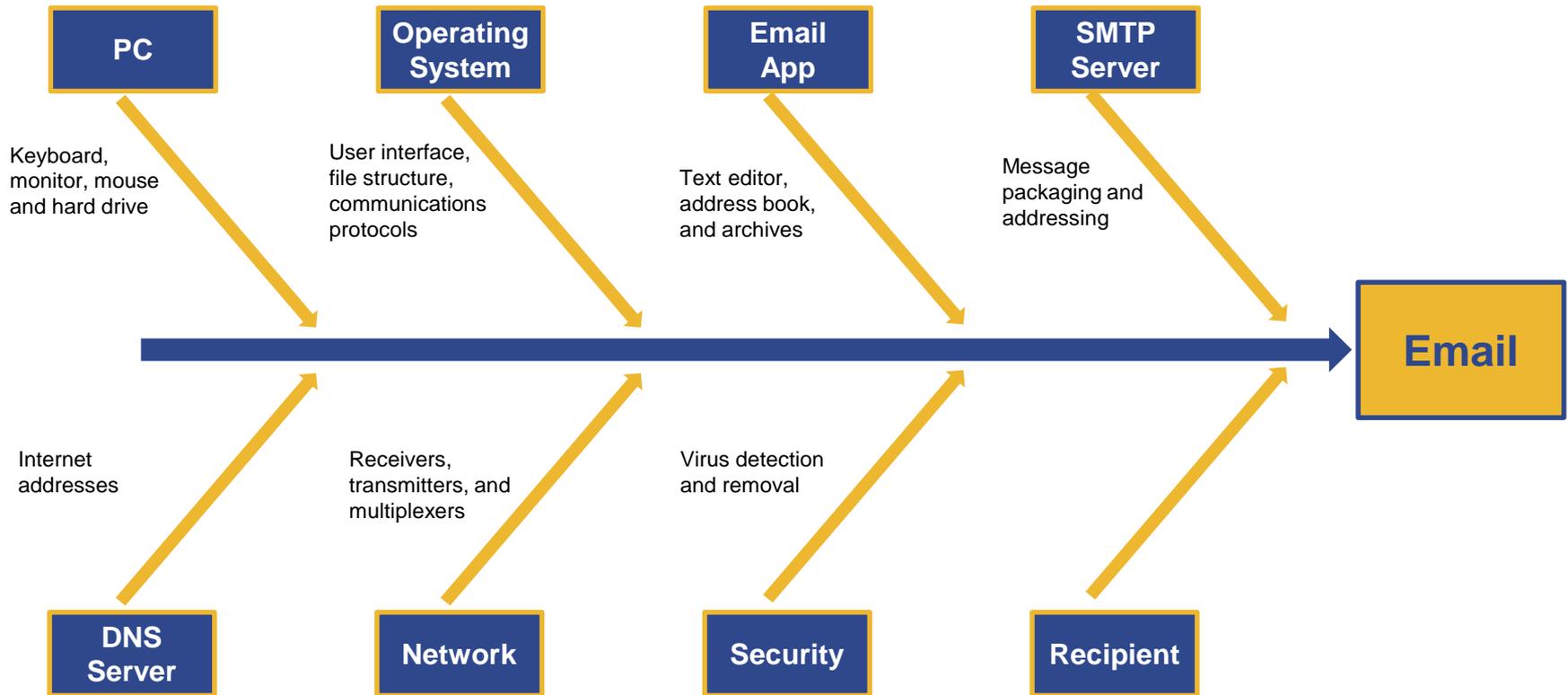


# Agenda

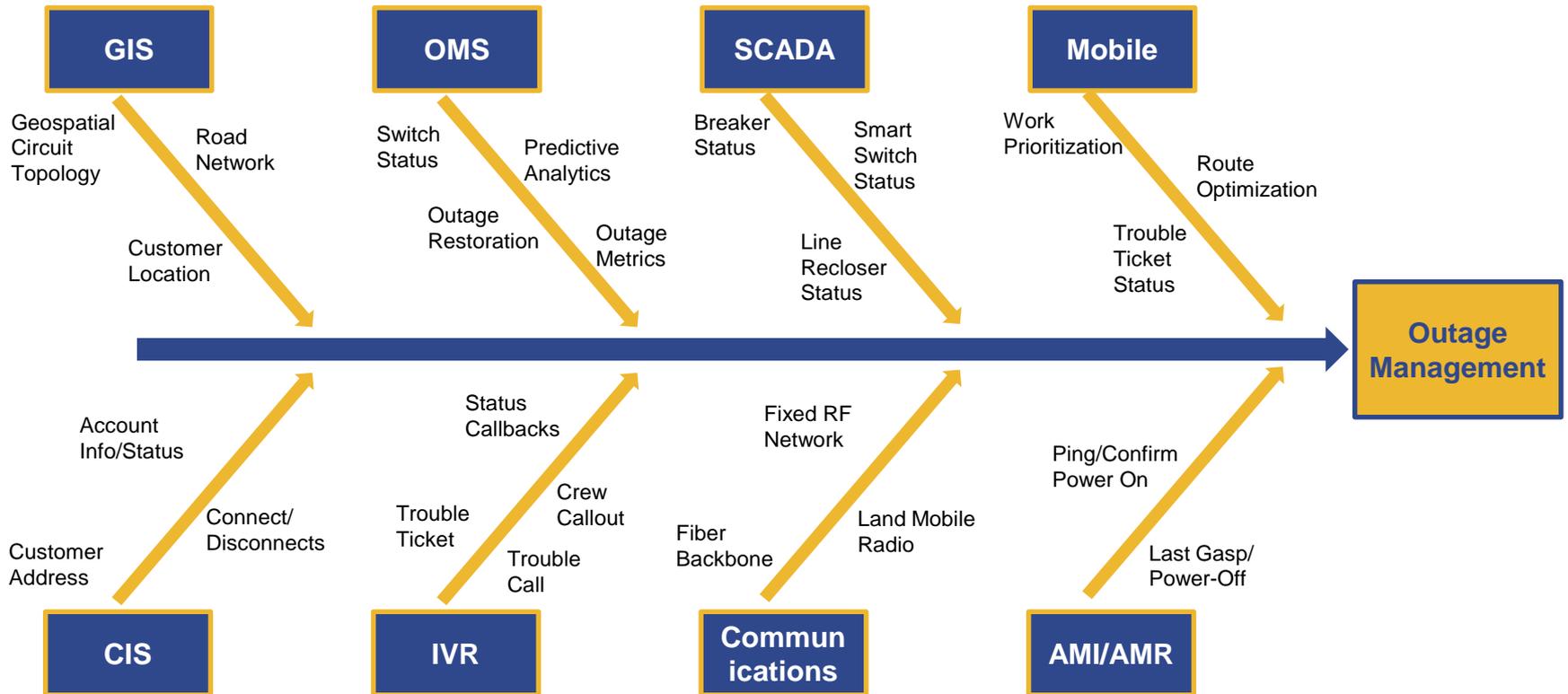
1. Why the Strategic Technology Roadmap is Important to RPU
2. How We Got Here
3. Technology Vision
4. Technology Drivers and Trends
5. Strategic Business Objectives
6. Technology Projects
7. Costs and Benefits [Business Case]
8. Current Roadmap
9. Alternatives
10. Key Recommendations



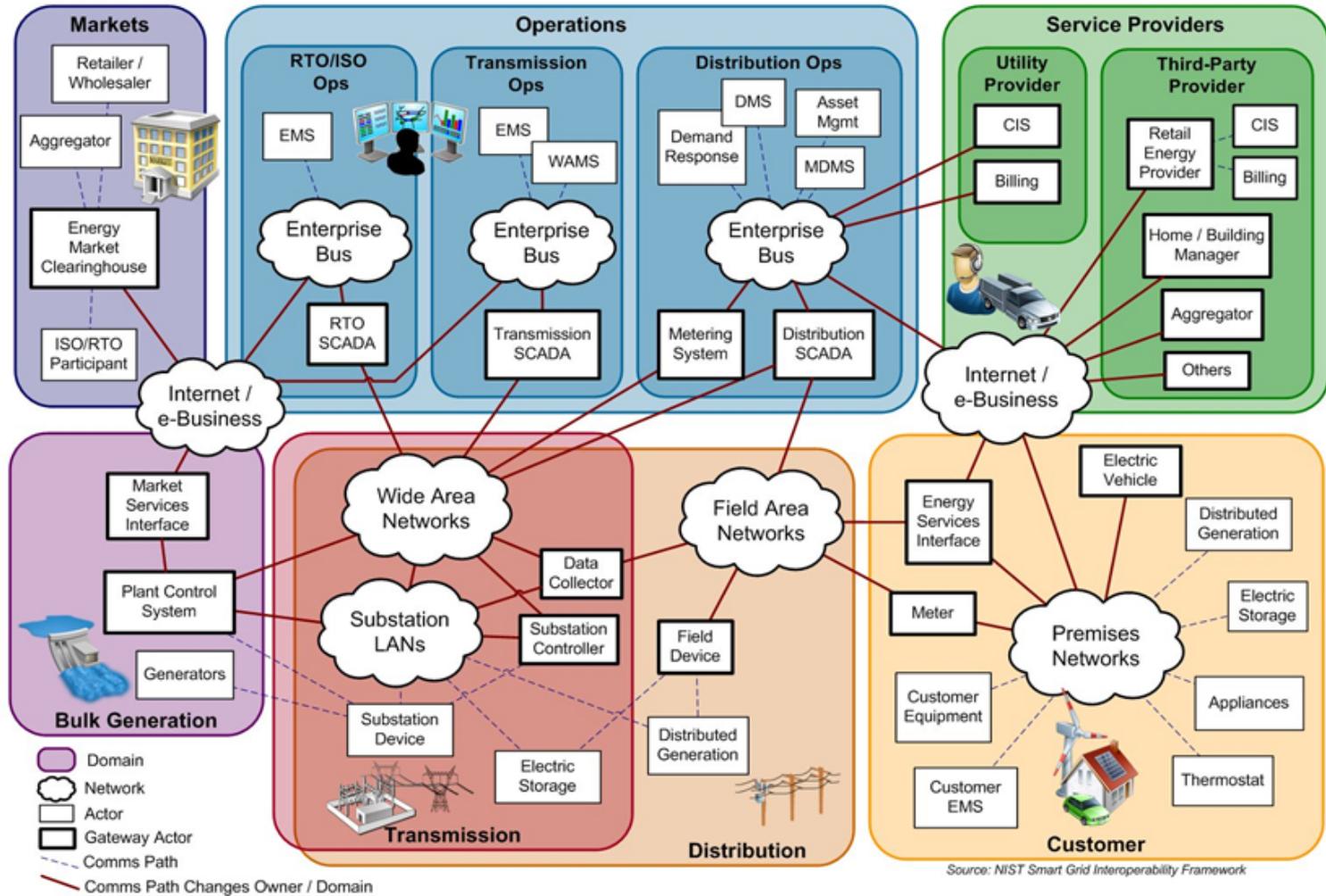
# As simple as sending an email...



# As complicated as Outage Management

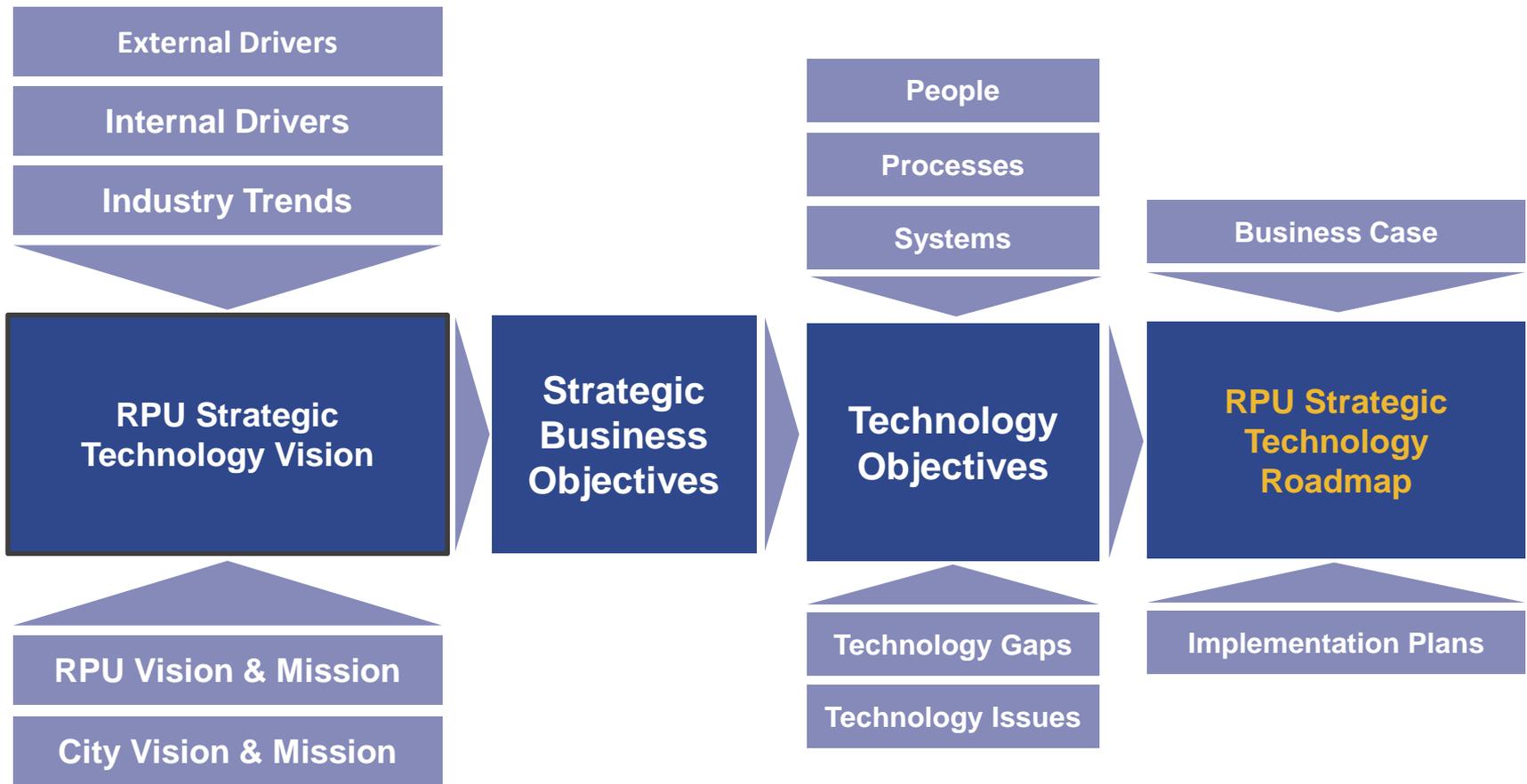


# Technology is Infrastructure

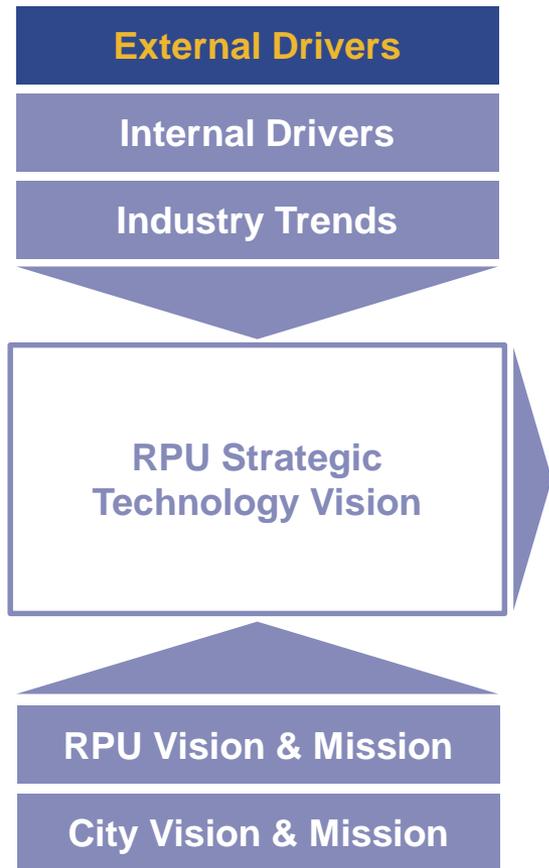


# How We Got Here

## Development of Strategic Technology Roadmap



# How We Got Here



**Customer Expectations**

**Policy and Regulation**



**Competition**

**Resource Conservation**



# How We Got Here



**Reliability**

**Operating  
Efficiency**



**Security**

**Workforce**



# How We Got Here



**Customer  
Engagement**



**Geographic  
Information**

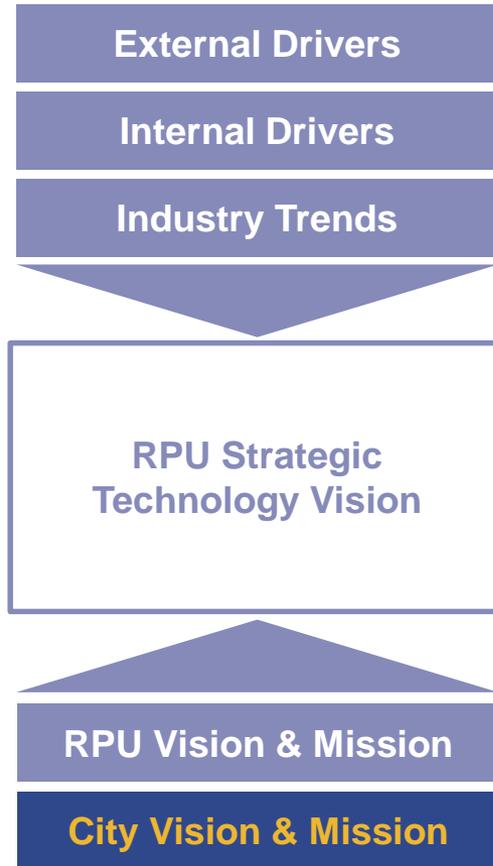


**Advanced  
Metering**



**Data Analytics**

# How We Got Here



## Vision

The City of Riverside establishes cooperative partnerships, identifies opportunities for enhancing services, and creates an open environment making Riverside a quality city of choice.

## Mission

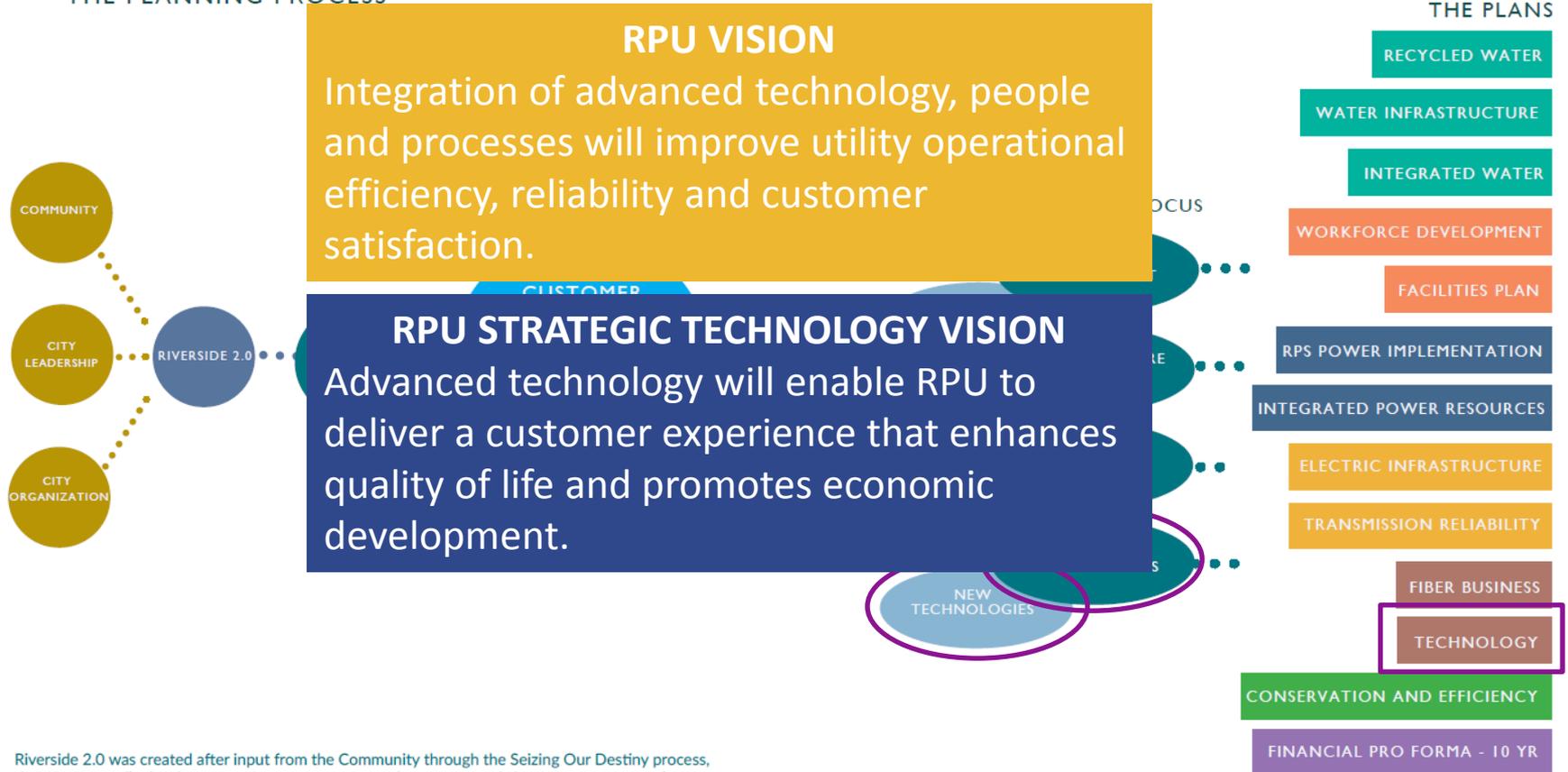
The City of Riverside is committed to providing high quality municipal services to ensure a safe, inclusive, and livable community.



# How We Got Here: RPU 2.0

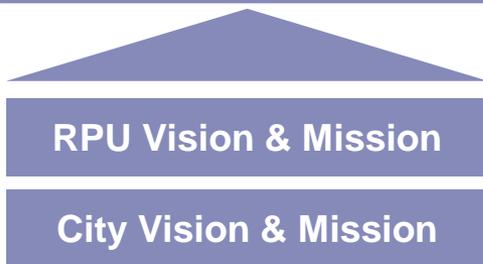
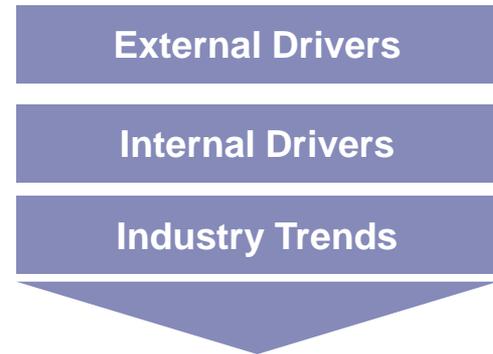
HOW WE GET THERE

## THE PLANNING PROCESS



Riverside 2.0 was created after input from the Community through the Seizing Our Destiny process, the City Council's development of seven strategic goals in 2015, and the City Management's governing principles. This graphic illustrates the planning process and specifically outlines how RPU's plans fit within the City's broader plan.

# How We Got Here



**Customer Service**  
*Enhance the customer service experience and boost customer satisfaction*



**Reliability**  
*Improve reliability, safety, and resiliency*



**Operational Efficiency**  
*Increase operational efficiency*

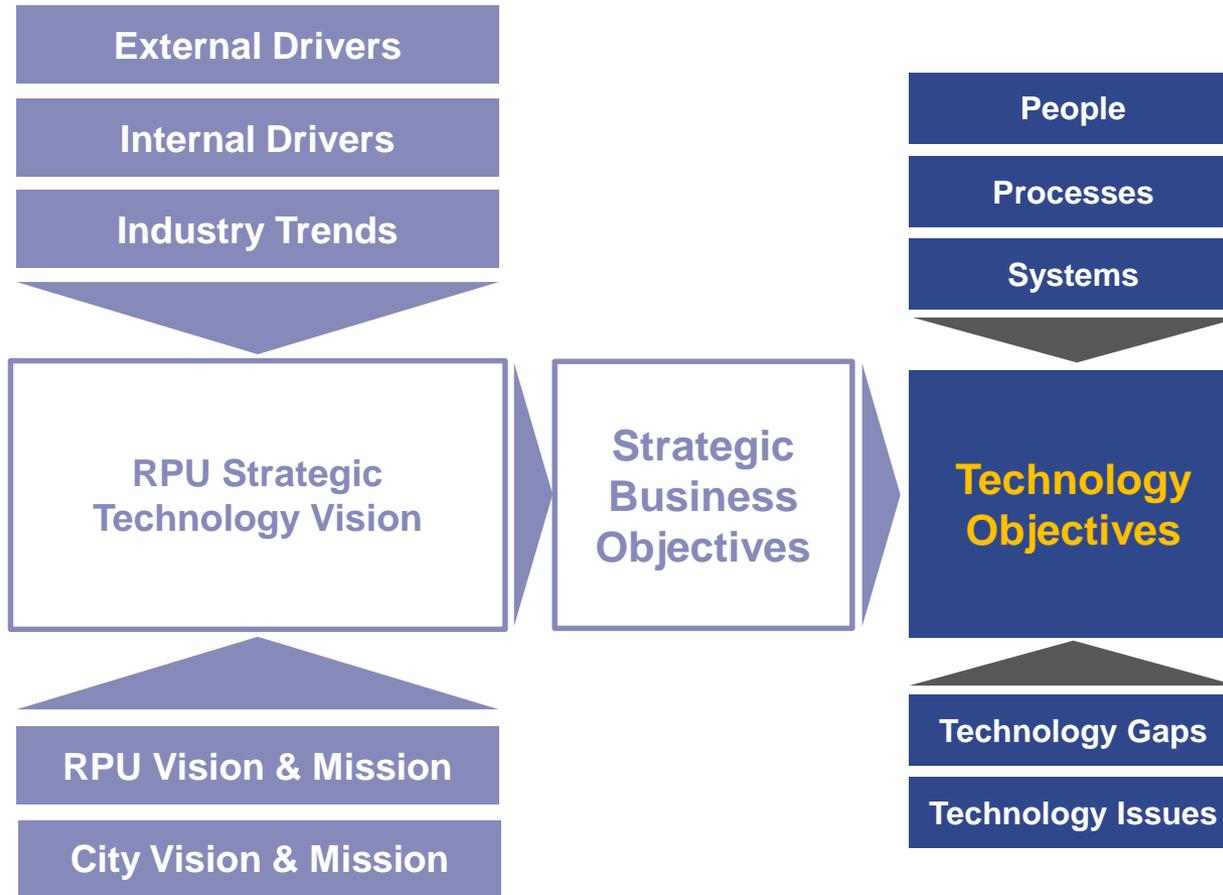


**Community Service**  
*Increase community service and enhance the quality of life for RPU customers*



**Economic Development**  
*Promote economic development in RPU's service area*

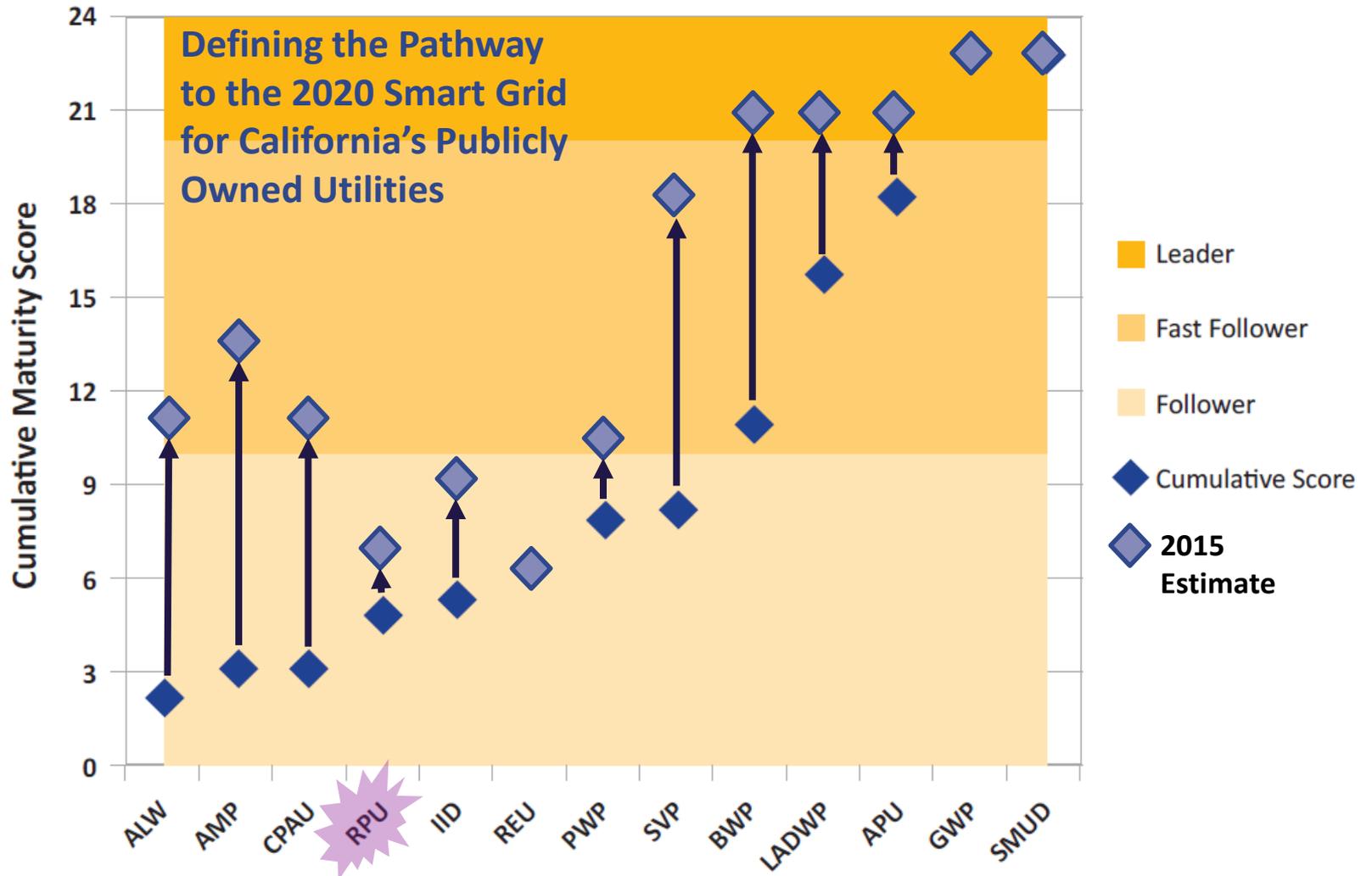
# How We Got Here



# How We Got Here



# Moving Slowly....



# Technology Projects

## Customer-Focused Technologies (IT Realm)

*Directly influence the customer experience and provide customer interaction.*

	Planning	Piloting	Deploying	Integrating	Optimizing
<b>CIS</b> Customer Information System			Industry		
			2015		2025
<b>CRM</b> Customer Relationship Management		Industry			
	2015				2025
<b>CWP</b> Customer Web Portal		Industry			
	2015				2025

# Information Based Technology Projects

	Planning	Piloting	Deploying	Integrating	Optimizing
<b>AMS</b> Asset Management System		Industry			
	2015			2025	
<b>WMS</b> Work Management System		Industry			
	2015			2025	
<b>WIS</b> Warehouse Inventory System		Industry			
	2015			2025	
<b>GIS</b> Geographic Information System				Industry	
			2015		2025
Mobile Applications		Industry			
		2015			2025
<b>ODMS</b> Operational Data Management System			Industry		
			2015		2025

# Technology Projects

## Operational Technologies (OT Realm)

*Real-time operation and control of Water and Electric delivery systems.*

	Planning	Piloting	Deploying	Integrating	Optimizing
<b>NCS/LMR</b> Network Communications & Land Mobile Radio	2015	Industry			2025
<b>AMI/MDMS</b> Advanced metering infrastructure & meter data management	2015	Industry			2025
<b>AVL</b> Automated Vehicle Locating	2015	Industry			2025

# Technology Projects

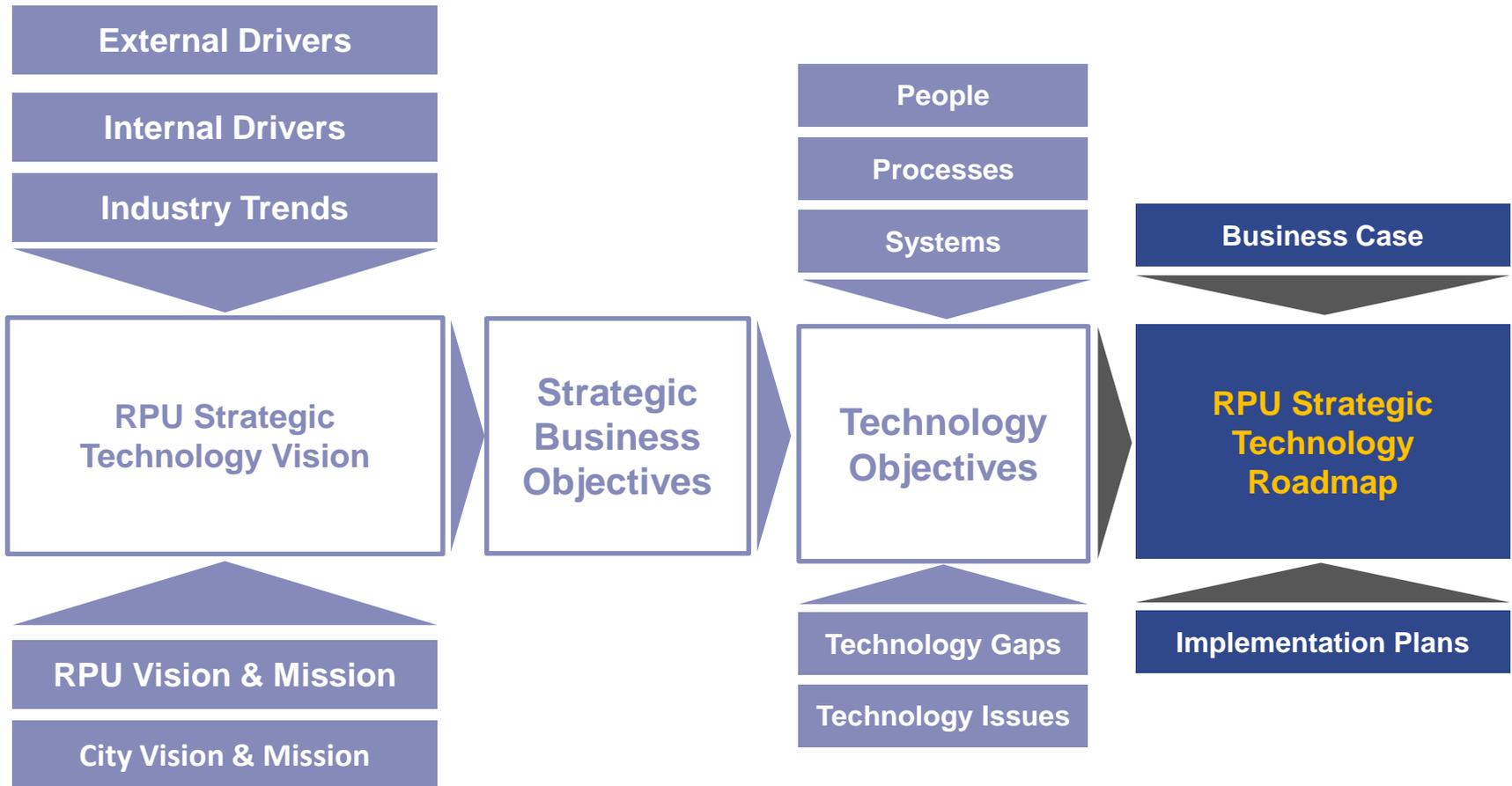
	Planning	Piloting	Deploying	Integrating	Optimizing
<b>DA</b> Distribution Automation	2015	Industry			2025
<b>SA</b> Substation Automation			Industry	2015	2025
<b>OMS</b> Outage Management	2015	Industry			2025
<b>SCADA</b> Supervisory Control and Data Acquisition			Industry	2015	2025
<b>ADMS</b> Advanced Distribution Management System	2015	Industry			2025

# How We Got Here

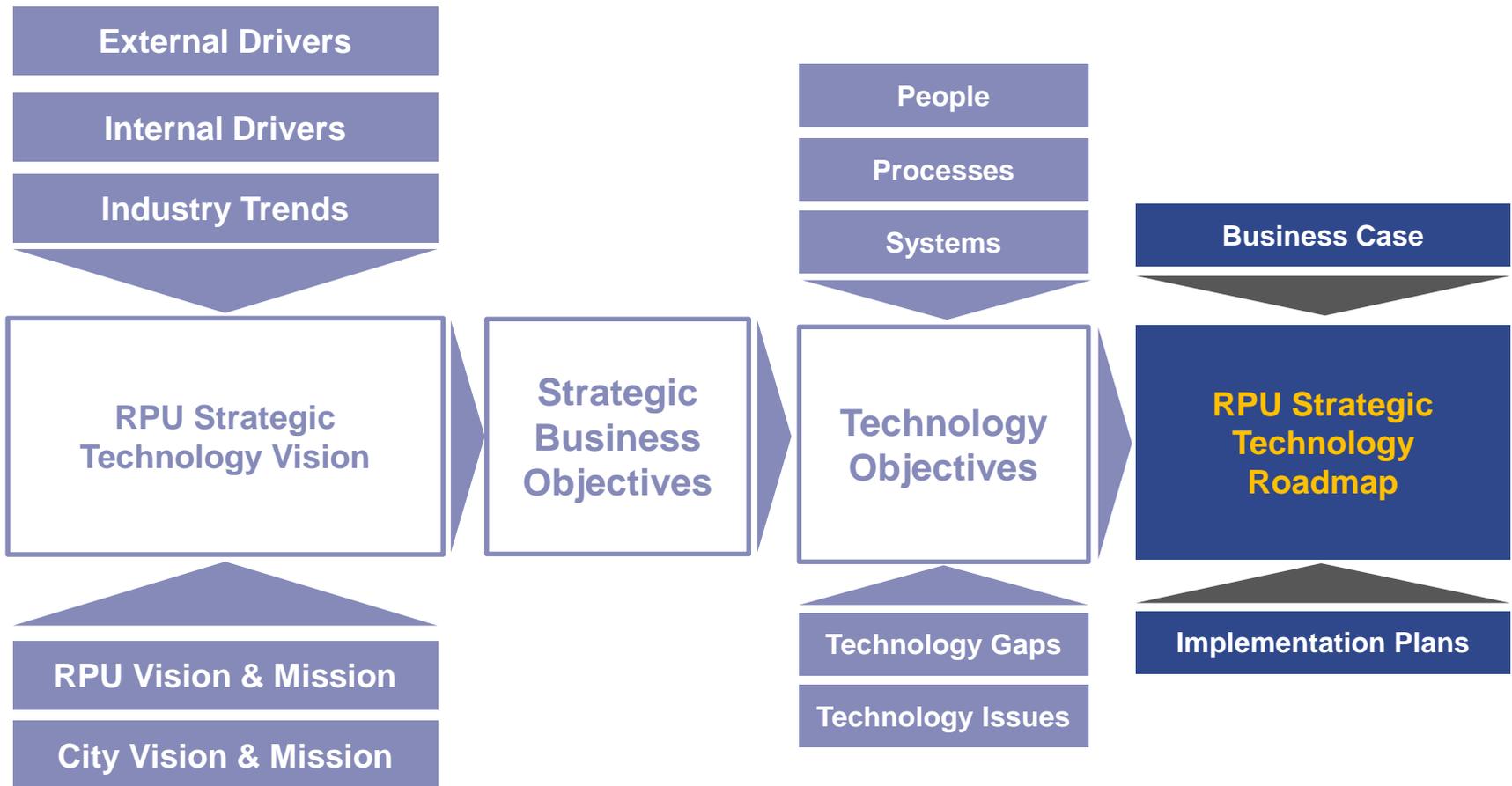
## Deliverables

1. Strategic Planning and Visioning Workshops
2. Gap Analysis
3. Cybersecurity Assessment
4. Communications Assessment and Preliminary Design
5. Technology Applications Integration
6. Mobile Technology Strategy
7. Technology Project Implementation Plans
8. IT Organization Structure Recommendation
9. Strategic Technology Roadmap
10. Strategic Technology Plan Report

# A Roadmap Ahead



# A Roadmap Ahead



# A Roadmap Ahead

## Phase I 2016-2017

- Complete in-flight projects
- Develop future business needs
- Establish OT Office
- Develop technology governance (cybersecurity) measures

\$28 - \$41  
Million

## Phase II 2018-2020

- Improve operational effectiveness
- Improve work/asset/inventory management, outage management and communications infrastructure
- Complete advanced technology pilots.

\$28 - \$42  
Million

## Phase III 2018-2020

- Improve operational effectiveness
- Improve work/asset/inventory management, outage management and communications infrastructure
- Complete advanced technology pilots.

\$14 - \$21  
Million

Capital: \$70 - \$104  
O&M: \$43 - \$64  
Total: \$113 - \$168  
(Millions)

# Customer Benefits

<b>Customer Information Management</b>	Enabling improved energy and water conservation by providing near real-time energy/water usage data to customers
<b>Improved Customer Service</b>	24x7 access to account information from any device; reduced time to start and stop service; and ability to evaluate service options including pre-pay
<b>Outage Management</b>	Reduced outage duration and extent; proactive outage notifications; and more accurate service restoration time estimates
<b>Customer Cost Management</b>	Keep customer costs down by detecting water leaks and energy and water diversions; reduced meter reading and service call costs; and reduction in energy and water losses
<b>Enhanced Quality of Life</b>	Improve customer choice through better integration of electric transportation, distributed solar and battery energy storage options

# Alternative Implementation Strategies

RPU Technology Projects	Low Technology	Medium Technology	High Technology
<b>AMR/AMI</b>	Capital: \$17.4M O&M: \$28.7M NPV: \$188/cust	Capital: \$19.6M O&M: \$33.0M NPV: \$215/cust	Capital: \$36.7M O&M: 61.4M NPV: \$401/cust
<b>OMS, IVR</b>	Capital: \$3.7M O&M: \$5.5M NPV: \$59/cust		
<b>ADMS</b>	Capital: \$3.4M O&M: \$3.4M NPV: \$39/cust		
<b>DA</b>	Capital: \$5.6M O&M: \$9.5M NPV: \$99/cust		
<b>SA</b>	Capital: \$1.5M O&M: \$2.7M NPV: \$29/cust		
<b>Totals</b>	Capital: \$31.6M O&M: \$49.9M NPV: \$414/cust	Capital: \$33.7M O&M: \$54.1M NPV: \$441/cust	Capital: \$50.9M O&M: \$82.5M NPV: \$626/cust

NPV = Net present value of benefits and savings

# Flexibility

## Status Quo

- > One major project at a time – Technology gap widens, future implementation and integration challenges and costs increase and customer value deferred.

## Accelerate

- > AMI implementation sooner would accelerate customer benefits, but implementation costs will increase – viable option but must be realistic about what we can accomplish

## Delay

- > Complete in-flight projects then recast the roadmap – Could be necessary if investment must be deferred but, the technology gap widens, future implementation challenges and costs increase and customer value deferred.

# Summary of Key Recommendations

No.	RECOMMENDATIONS	BENEFIT
1	Establish OT Office	<ul style="list-style-type: none"> <li>• Successfully complete technology projects</li> <li>• Ensure maximization of benefit from technology investments</li> </ul>
2	Adopt enterprise integration	<ul style="list-style-type: none"> <li>• Reduced data silos</li> <li>• Improved decision-making capabilities</li> </ul>
3	Expand mobile access to enterprise systems	<ul style="list-style-type: none"> <li>• Enhanced customer service</li> <li>• Increased staff efficiency</li> </ul>
4	Expand communications backbone	<ul style="list-style-type: none"> <li>• Enable implementation of advanced technology</li> </ul>
5	Deploy advanced technology projects with AMR/AMI, ODMS, AMS and WMS, and OMS as priority	<ul style="list-style-type: none"> <li>• Increased customer convenience</li> <li>• Enhanced customer service</li> <li>• Improved system reliability</li> </ul>
6	Expand mobile application offerings	<ul style="list-style-type: none"> <li>• Increased customer convenience</li> <li>• Enhanced customer service</li> </ul>



## **Steven S. Rupp**

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