

The Emergence of the DSP

Distribution Systems Platforms and Use Cases

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IMPLEMENT [IMPACT] INNOVATE

TRC Corporate Overview

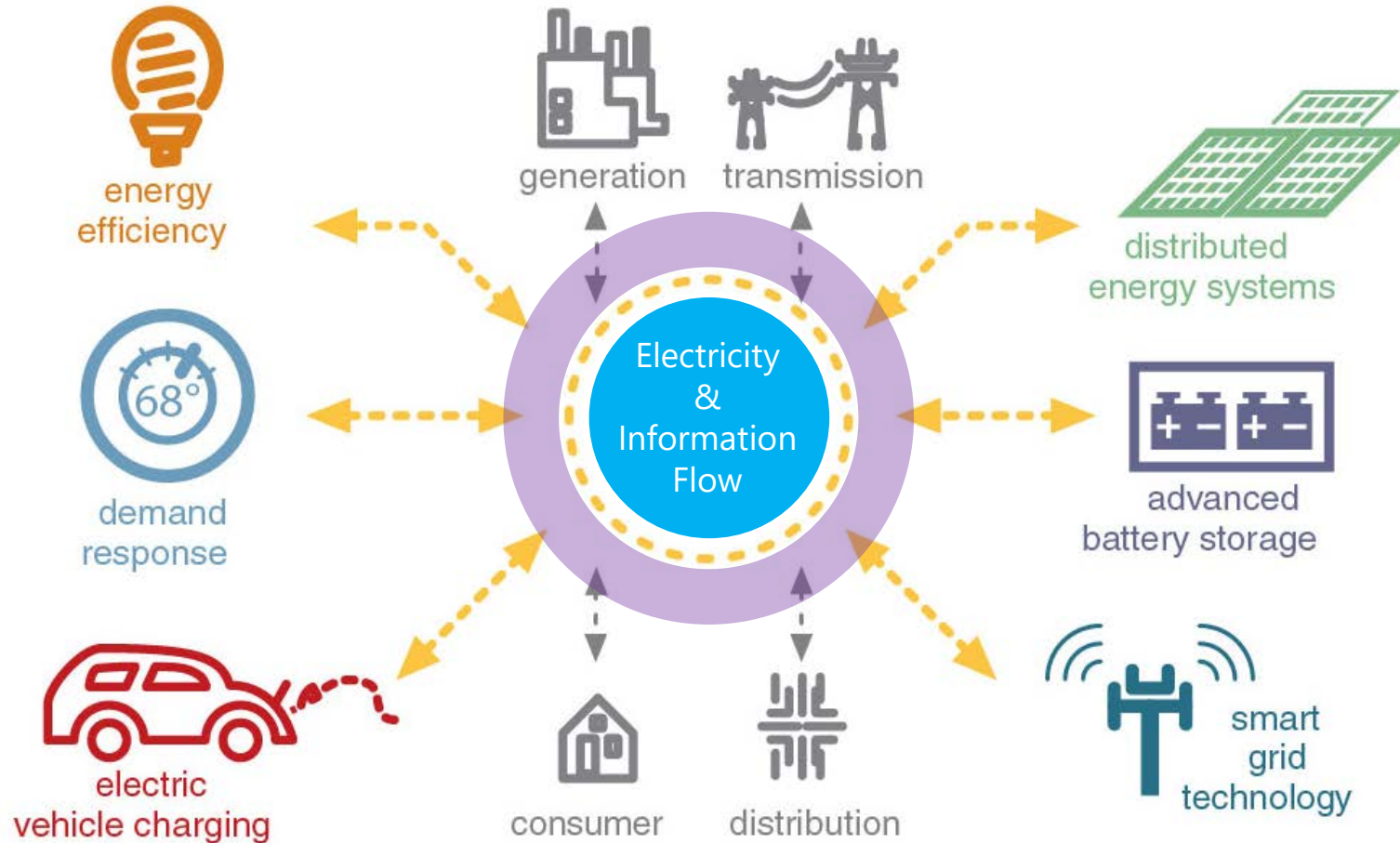
- \$785 MM Annual Revenue with Steady Growth
- 50 Years Engineering, Construction Management, and Environmental Project Experience
- Multi-disciplinary Engineering, Environmental, and Infrastructure Consulting Firm
- Over 5,000 Technical Staff in 140 Offices Nationwide
- Power Delivery Engineering has over 1,500 Engineers and Technical Staff
- ISO 27001 Certified
- www.TRCompanies.com



The Top 20 Design Firms by Sector

RANK		FIRM
2018	2017	
4		POWER ENR Engineering News-Record
Top 20 Revenue: \$5.6 Billion Top 20 Market Share: 73.8%		
7	10	TRC

Why a DSP?



- Increasingly bi-directional and distributed nature of the grid offers both opportunities and challenges for utilities
- Consumers are evolving as well from receivers of data and energy to generators “Prosumers”
- Utilities and customers alike can benefit from a distribution platform that acts as an enabler rather than an inhibitor

US IOU

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- Driven by climate change and distributed energy technologies – cooperative relationship between regulator and utility
 - Increasing demands of customers for “plug and play” distribution infrastructure
 - Investments in real-time monitoring and control to facilitate both visibility and flexibility
 - Utility using technology to offer new services:
 - Working with developers to optimally site DERs
 - Leveraging grid sensing for reliability and safety
 - Ability to leverage new aggregations of DERs for VPPs to offset peaks in constrained areas



US Metro

- Creating their own DSP to improve the lives of its citizens
- Electrification of mass transit and vehicle fleets for green, economic, and resiliency motivations
- Using electrification as a means to encourage EV and other DER interconnect at a community level (thinking of the city as a “Network of Microgrids”)
- Leveraging the data generated by the DSP to better inform the municipal utilities and IOUs that serve its citizens



European DSO

- By regulation, cannot compete with customers; increasing DER penetration and retailer/customer demand
- DSP helped them answer the question of staying relevant
- Work with customers and retailers with goal of being most flexible distribution network in Europe
- Investments in real-time monitoring/control at substation level
- Investments in software-connected marketplaces to offer retailers a chance to “plug in” to the network



Thank You

Craig Cavanaugh
VP – Integration
919.720.0827
CCavanaugh@TRCcompanies.com