



PJM's Strategy for Data & Analytics

IEEE PES Big Data and Analytics for Power Systems Subcommittee

Nikki Militello
Manager – Applied Innovation

PJM Interconnection
Sept. 14, 2022

Historically, PJM's primary focus has been on expansion and market reforms.

A common information platform has taken a back seat, and PJM recognizes current limitations.

While there is a structure in place, it is harder than it needs to be.

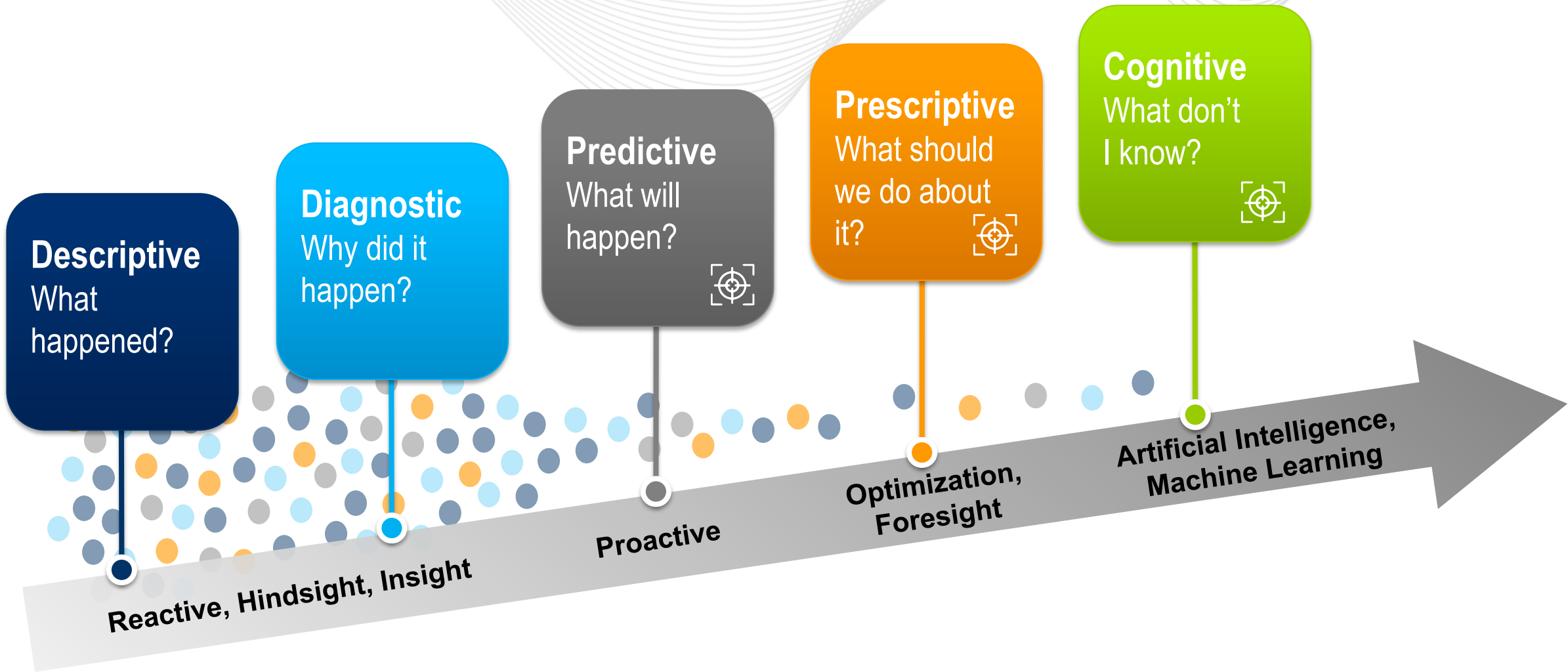
PJM is still in the early stages of its data and analytics work.

In order to align with the PJM Strategy, the data and analytics vision is to:



Empower a data-literate workforce* to provide proactive, efficient and valuable analytic services to enable the energy transition, ensure reliability of the grid and champion innovation.

**Workforce refers to the PJM workforce, not just a subset of employees or a specific department.*



While there are challenges, PJM has numerous strengths that should be leveraged during its transition to become a more data and analytics-driven organization.

	Talented Employees		Self Service
	Collaborative Culture		Advanced Analytics
	Data Rich and Data Driven		Targeting Innovation

Several themes of pain points emerged from our current state stakeholder interviews.

	Divisional Mindset		Reactive Approach to Analytics
	Limited Capacity for Data & Analytics Work		Limited Data Governance
	Data Exists in Silos and Is Hard to Access		Data Is Hard To Use

Level 1 Basic	Level 2 Opportunistic	Level 3 Systematic	Level 4 Differentiating	Level 5 Transformational
<ul style="list-style-type: none"> Data is not exploited, it is used D&A is managed in silos People argue about whose data is correct 	<ul style="list-style-type: none"> IT attempts to formalize information availability requirements Progress is hampered by culture; inconsistent incentives 	<ul style="list-style-type: none"> Different content types are still treated differently Strategy and vision formed (five pages) 	<ul style="list-style-type: none"> Executives champion and communicate best practices 	<ul style="list-style-type: none"> D&A is central to business strategy
<ul style="list-style-type: none"> Analysis is ad hoc Spreadsheet and information firefighting Transactional 	<ul style="list-style-type: none"> Organizational barriers and lack of leadership Strategy is over 100 pages; not business-relevant Data quality and insight efforts, but still in silos 	<ul style="list-style-type: none"> Agile emerges Exogenous data sources are readily integrated Business executives become D&A champions 	<ul style="list-style-type: none"> Business-led/ driven, with CDO D&A is an indispensable fuel for performance and innovation, and linked across programs Program mgmt.. mentality for ongoing synergy Link to outcome and data used for ROI 	<ul style="list-style-type: none"> Data value influences investments Strategy and execution aligned and continually improved Outside-in perspective CDO sits on board

D&A = data and analytics; ROI = return on investment

© 2017 Gartner, Inc.



TYPE	ICCP DNP3 Synchrophasor
AMOUNT	3 million + data points
SPEED	10 seconds to sub-second
SIZE	90+ TB

Data Governance

A set of principles and practices that ensure high quality through the complete life cycle of PJM's data



Data Lake

Serves as a central repository of PJM's analytics-bound structured, semi-structured, and unstructured data



Analytics Ad Hoc

Provides an on-demand environment that allows analysts to quickly dive into and process large amounts of data and prototype their solutions



Five-Minute Load Forecast

Improve short-term load forecast to more accurately predict load on “outlier” days

Generator Data and Analytics

Generator database replacement for the analytics portion of the application

Cybersecurity Threat Detection

Leverage data/tools to create algorithms to detect threats and anomalies

Geo Forsythe
Program Manager
heather.forsythe@pjm.com

Chris Grady
Data Governance Project Manager
Chris.Grady@pjm.com

Kim Brockmeyer
Data Lake Project Manager
kimberly.brockmeyer@pjm.com

Ed Kovler
**Analytics Ad Hoc
Environment Project Manager**
Edward.Kovler@pjm.com

Tom Zadlo
**Manager, Corporate Data
Management**
Thomas.Zadlo@pjm.com

Nikki Militello
**Manager, Applied
Innovation**
Nikki.Militello@pjm.com

Asanga Perera
**Sr. Manager, Advanced
Analytics**
Asanga.Perera@pjm.com

Gautam Punjabi
**Sr. Manager, Enterprise
Architecture**
Gautam.Punjabi@pjm.com