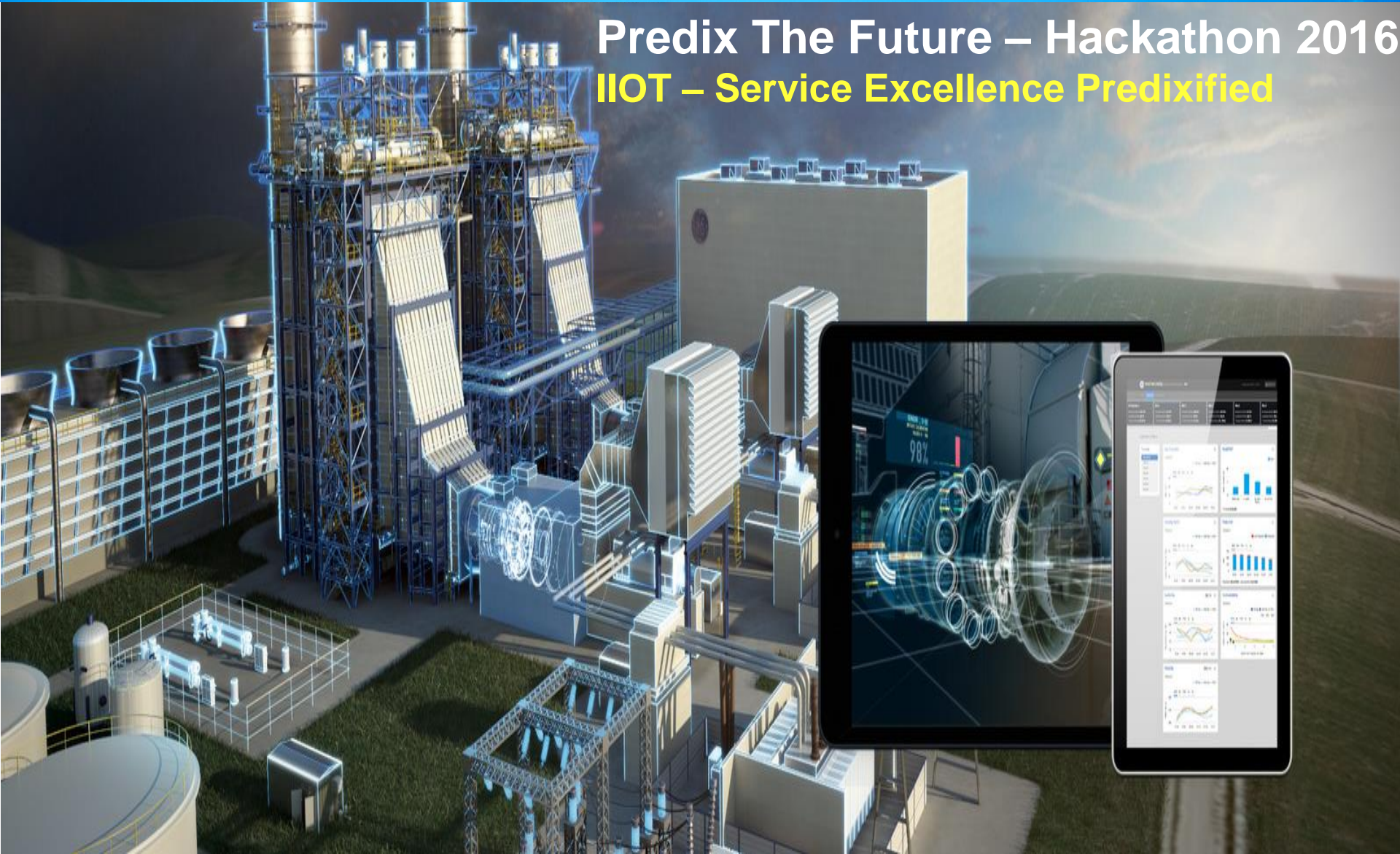


Predix The Future – Hackathon 2016

IIOT – Service Excellence Predixified



Capgemini Hackathon Team



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Service Excellence Predixified – Power Sector

Power Sector

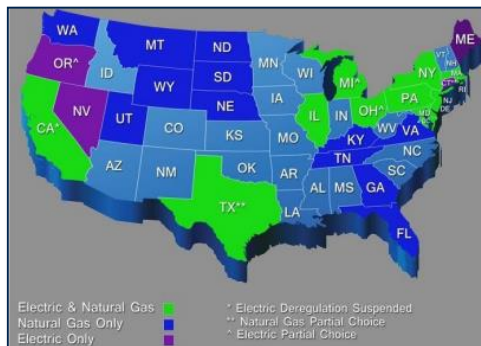


Gas Turbines

Currently most of the aircrafts and ships use GT engines

Used for power generation

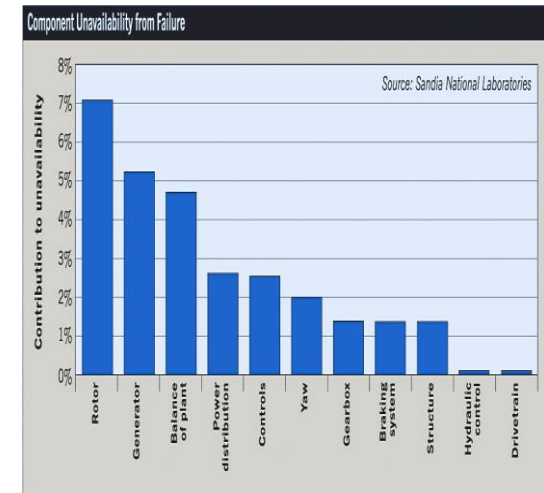
Manufacturers: General Electric, Pratt & Whitney, SNECMA, Rolls Royce, Honeywell, Siemens – Westinghouse, Alstom



Gas Turbine Market

- Present market for gas turbine system equipment and parts is \$40billion.
- The market will grow faster than GDP over the next 10 years
- Demand for cost effective solution for Non regulated turbines

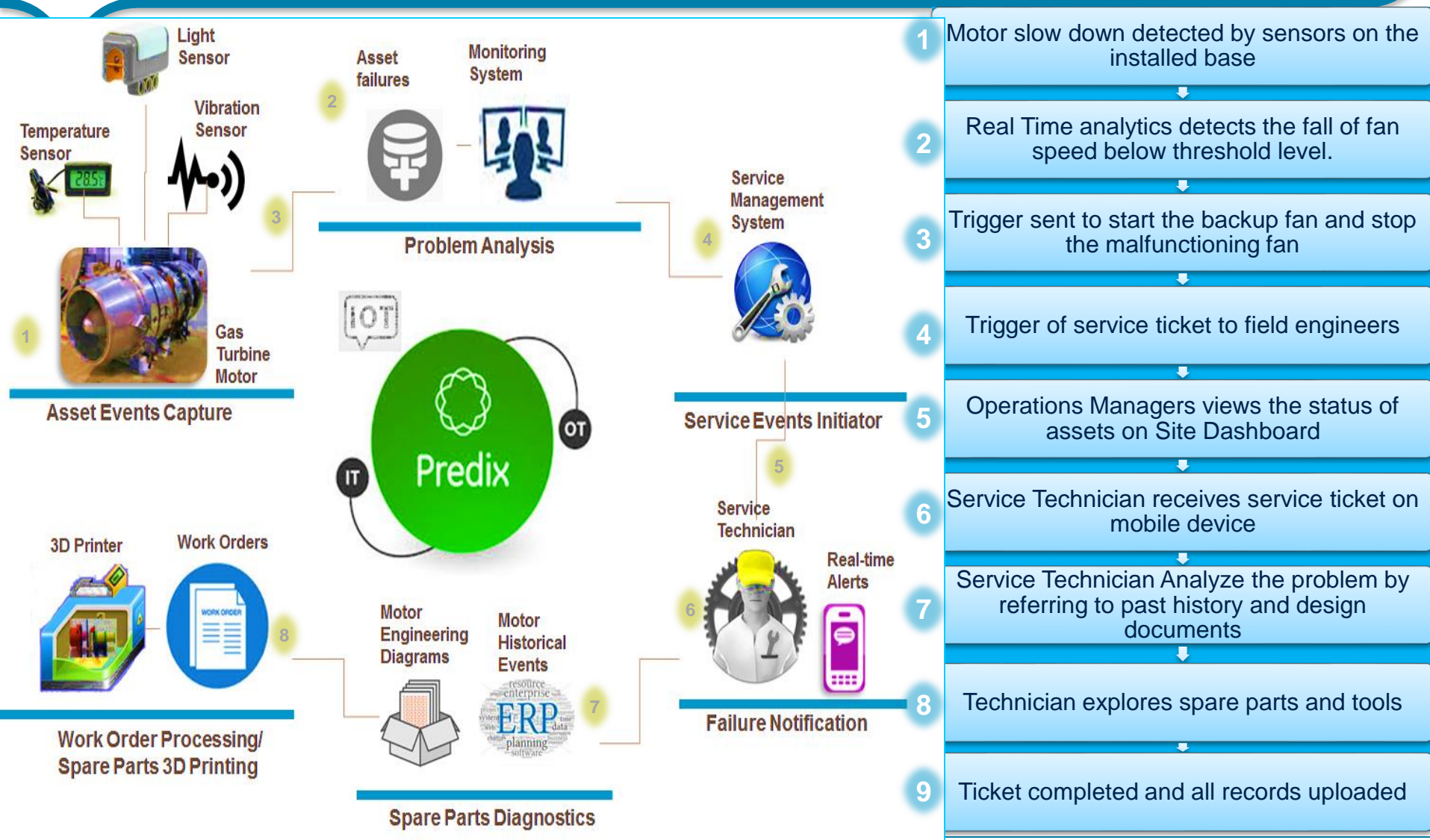
Machine Failures



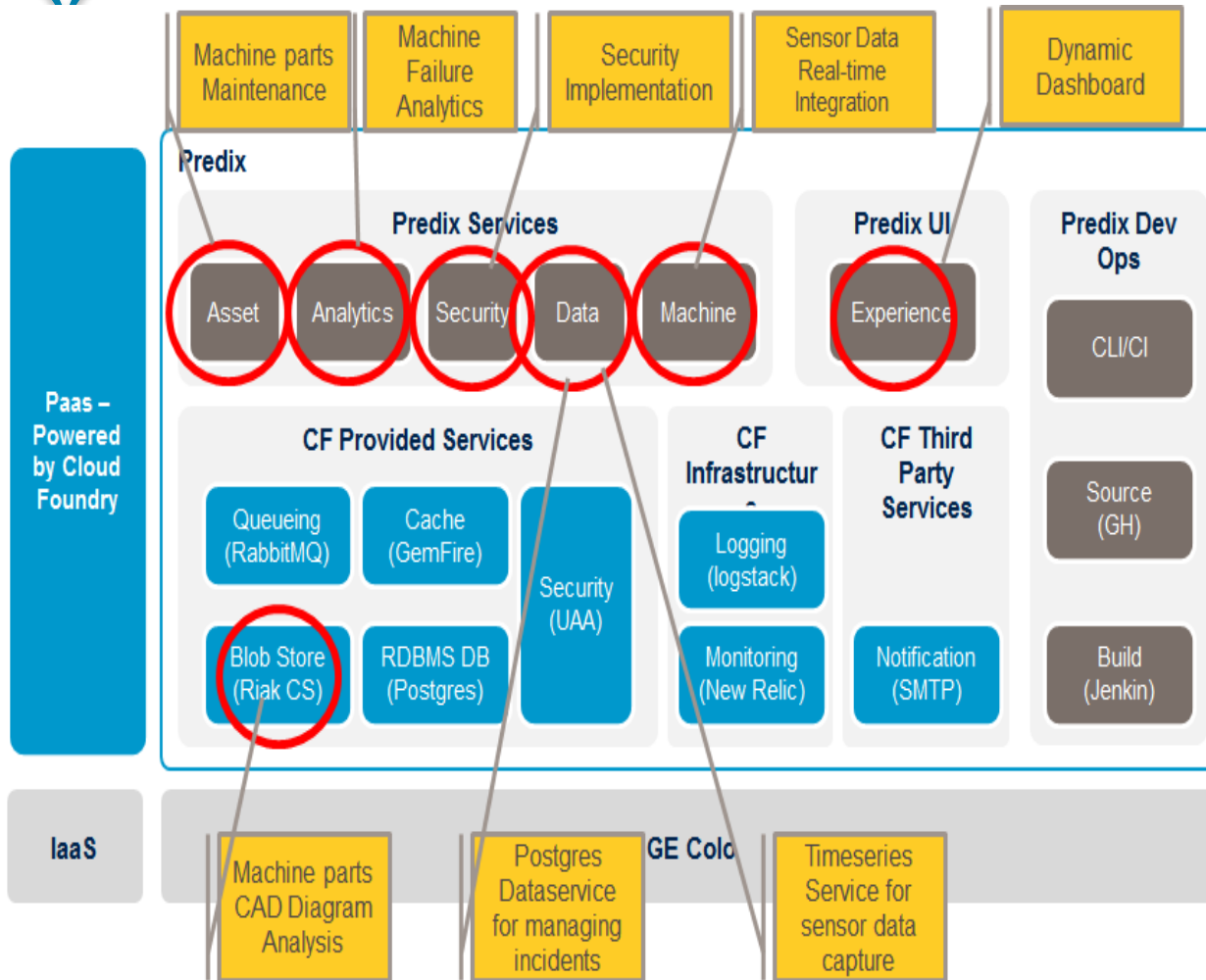
2017 Gas Turbine Market \$ billions

	Turbine/gen	HRS	Steam turbine /gen	Balance of plant	Total
New plants	15	6.3	4.5	3	28.8
Replacement parts and consumables	6	2.5	1.8	1.2	11.5
Total	21	8.8	6.3	4.2	40.3

Proposed Scenario - Predixified Service Excellence



Predix™ 2.0 Services - Applied



Predix Authorization service

- Predix UAA services

Predix Machine services

- OSGI Bundle for data extraction

Time series Services

- Sensor time series data management

Asset Services

- Manage Machine parts
- Documents references

Postgres Services

- Incident failures data management

Blobstore Services

- Machine CAD diagrams storage

Analytical services

- Python analytical component for anomaly detection

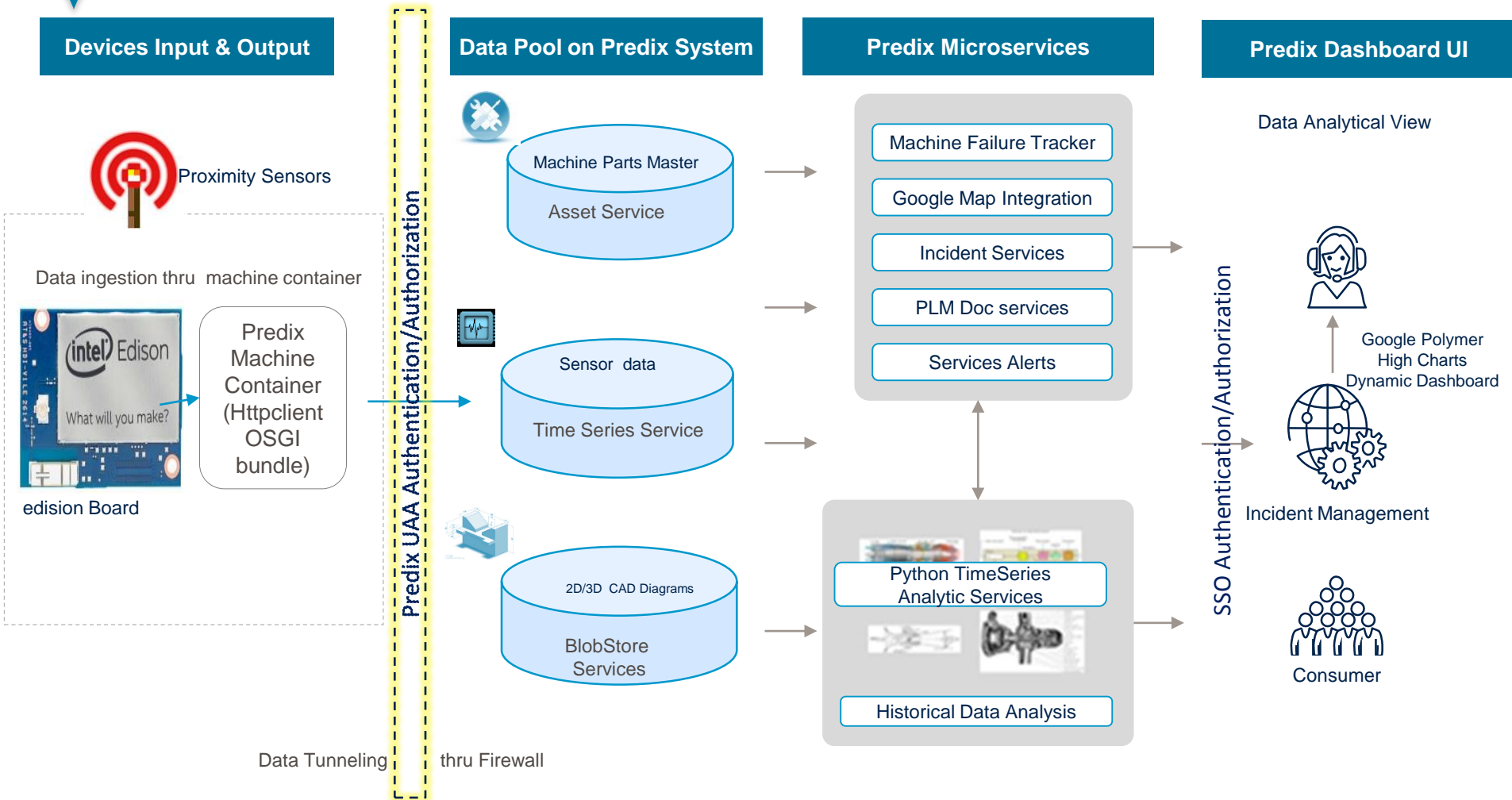
Predix View services

- Dynamic Dashboard
- Chart visualization

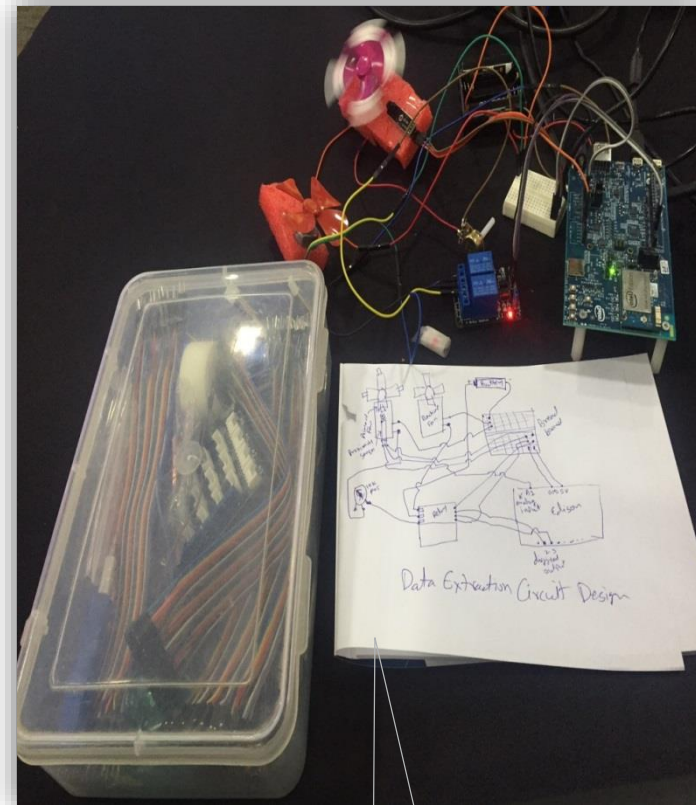
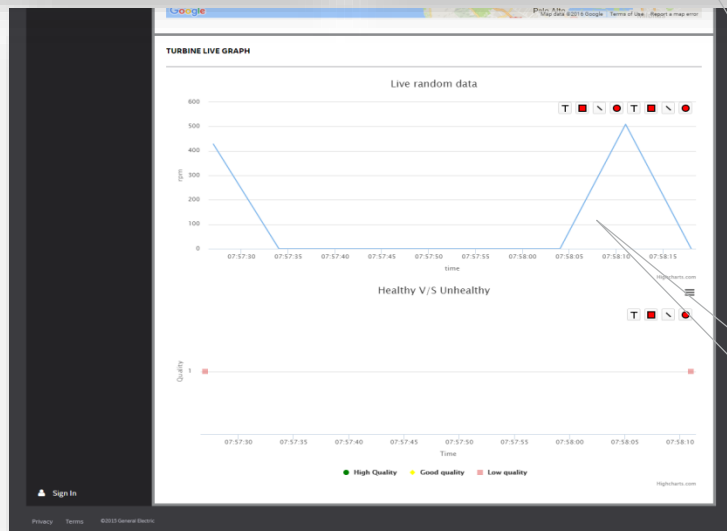
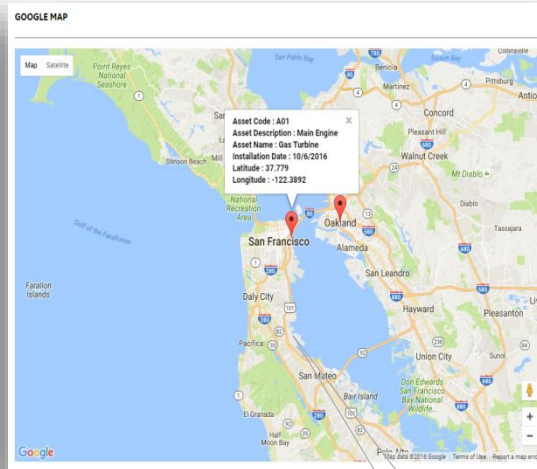
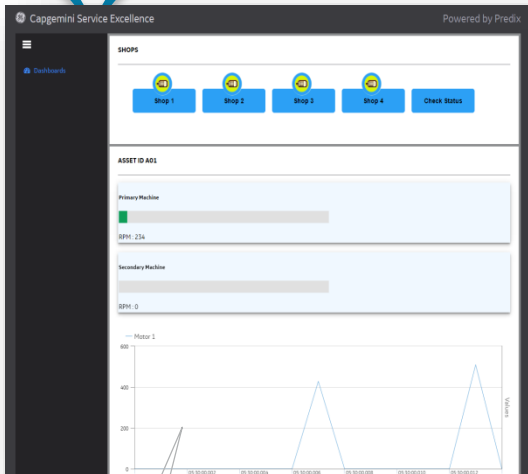
Predix Microservices

- Access machine parts data
- Failure incidents data access
- Access CAD diagrams

Solution Architecture



Proposed Scenario - Predixified Service Excellence



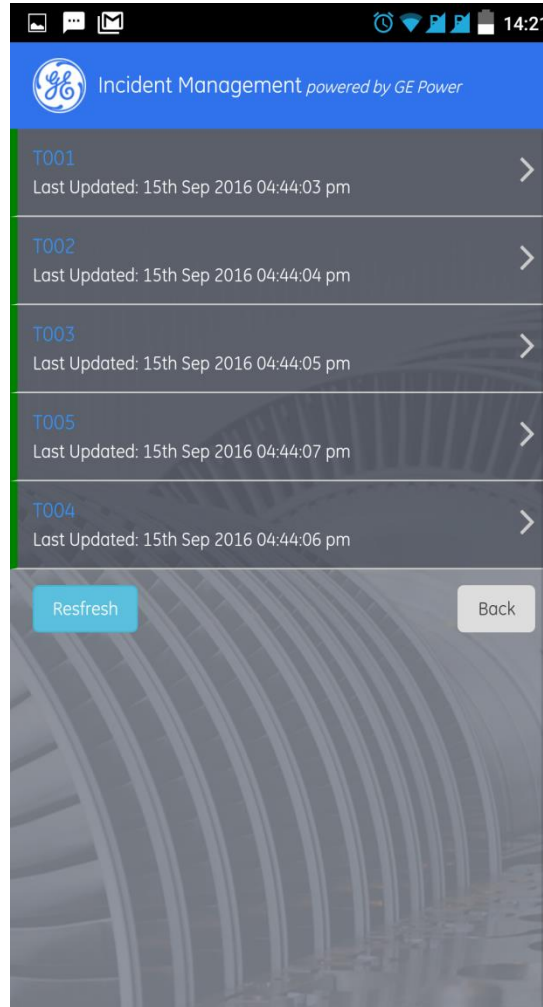
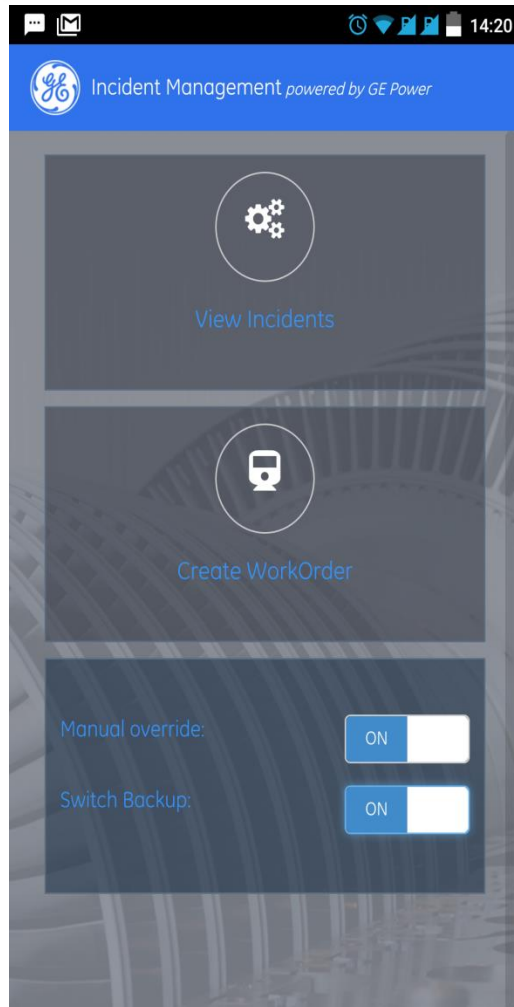
Time series Data

Machine Asset Data

Analytical Outcome

Sensor data in Machine Container

Proposed Scenario - Incident Management



Predixified Solution – Key Highlights

ZERO Downtime

Continuous monitoring achievement by establishing digital Twin of machineries on cloud

Real time response

Invocation of real-time preventive maintenance ensuring continuous asset operation

Build context

Publication of Time series data from sensors for building context around digital Twin

Alerts/Notification

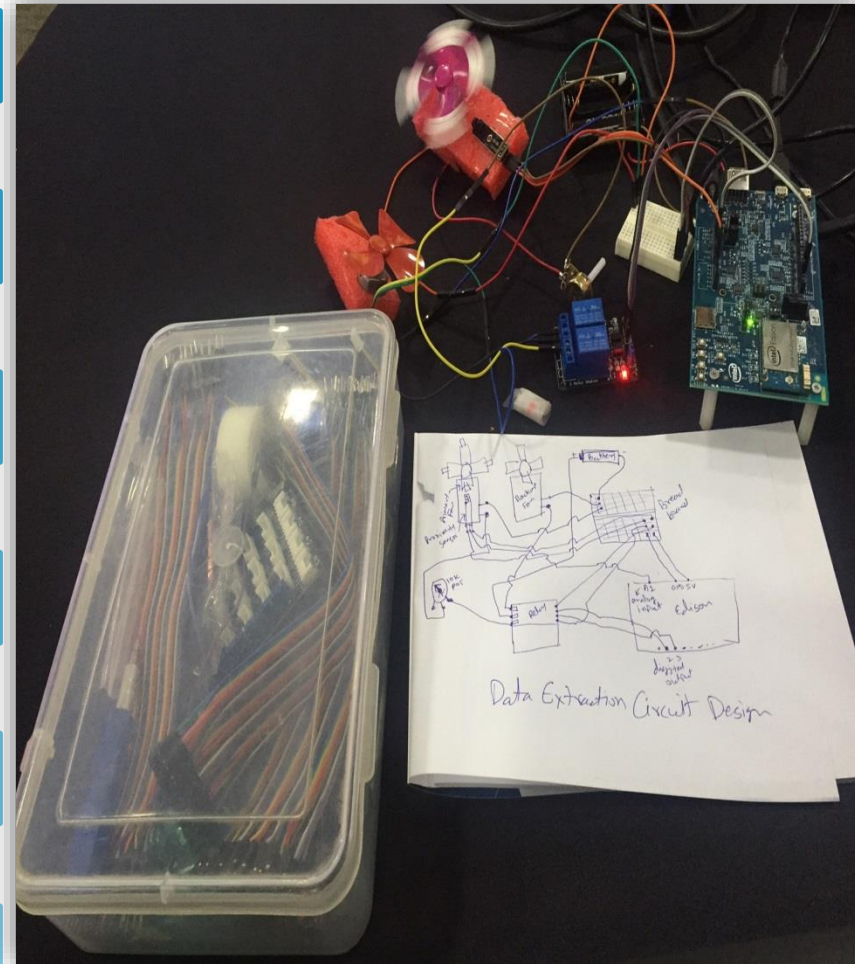
Real-time notification will be sent to field engineers along with service ticket

Crowd computing

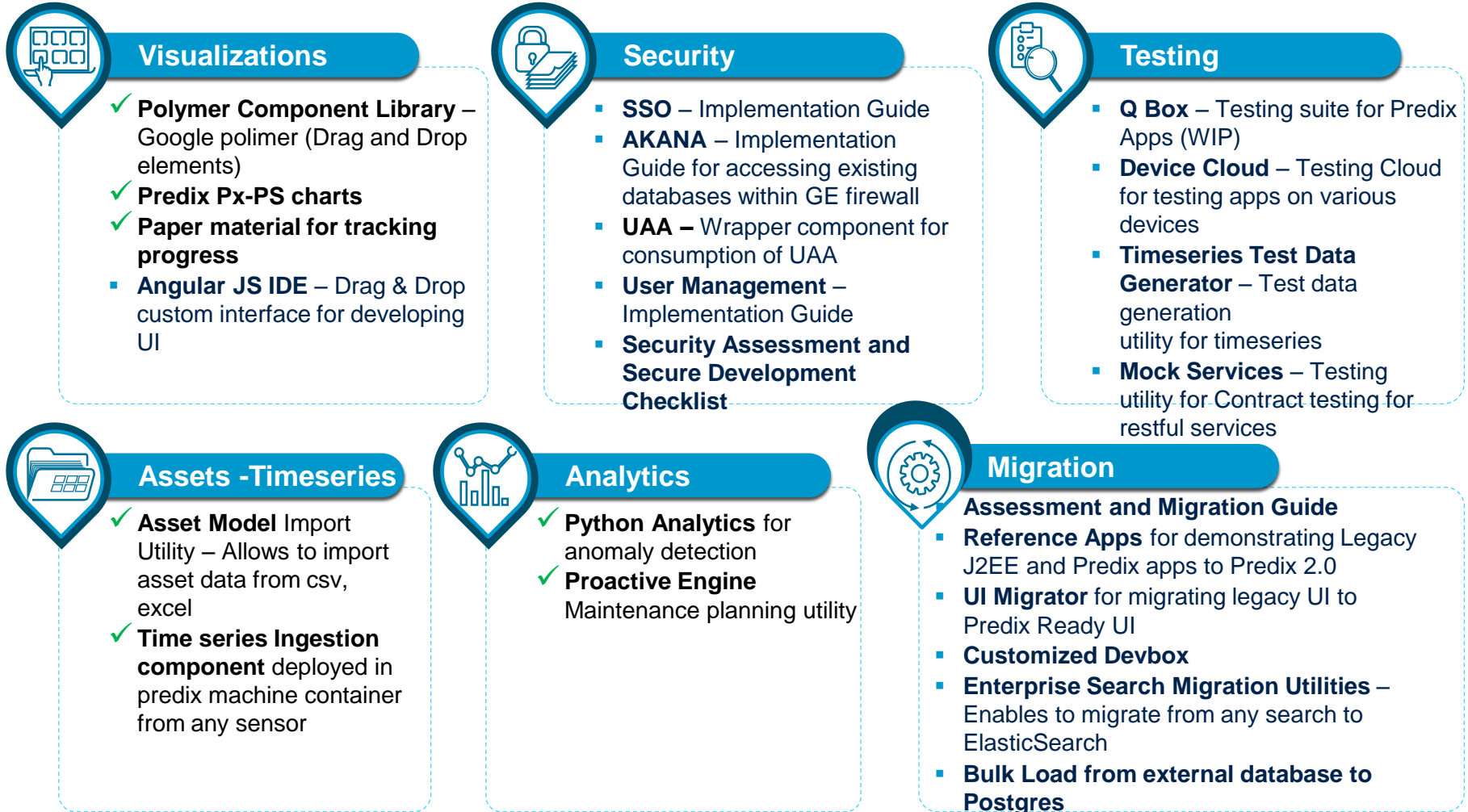
Collaboration with engineering crowd for problem analysis

Resolution/Recommendation

Technical guidance for issues resolution with right analytical component from Predix Analytical catalog



Capgemini Accelerators Catalog



Future Possible Enhancements

Akana webservices for real-time integration of 2D / 3D engineering diagrams from PLM

Enhance current sample Incident Ticket feature with Service Now Incident Management

Develop Digital Twin to identify faulty component and provide assistance in quick repair

Apply context aware computing techniques for establishing self learning Digital Thread

Integrate with Wearable Device to fetch component information through PLM in realtime

Local 3D printing for faster part replacement

Forecasting failure based on historical data and other parameters

Thank You

Get Predixified with Capgemini