



IoT WoRKS: ANALYTICS SERVICES



IoT WoRKS™ by HCL allows organizations to experience IoT functioning in their business context, creating entirely new services that deliver measurable business outcomes. These experiences will have an increasing role in differentiating these businesses and positioning them as 21st Century Enterprises.

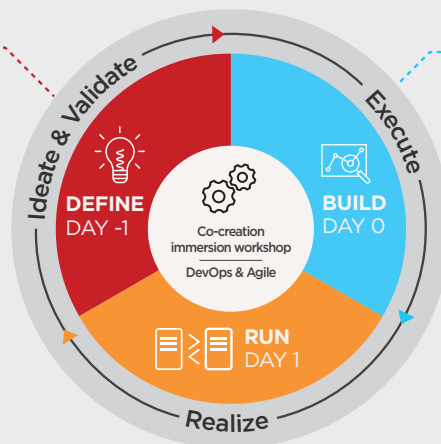


Our unique approach of expertise-led innovation, partnership-led solutions & expertise in platform interoperability, scalability, and flexibility makes us one of the pioneers in IoT services globally

END-TO-END IoT OFFERINGS FOR ORGANIZATIONS ACROSS DIFFERENT IoT MATURITY LEVELS

Plan your IoT program customized to your needs

- Identify business pain points that IoT can solve & business case (RoI)
- Industry insights & benchmark
- IoT Roadmap in line with desired business outcomes
- POC Plan/Technology Roadmap
- User-centric business process transformation project plan



Implement your IoT program with secure ecosystem-based solutions

- IoTization - Device, Gateway, Connectivity, Security
- IoT Platform - Data Storage, Device Management, Data Science Workbench
- IoT applications & analytics
- Integration of IoT applications with rest of the IT landscape

Realize value from your IoT program with state-of-the-art IT/OT support services & analytics expertise

- Provisioning, Measuring & Monitoring
- Orchestrate IT/OT
- Platform Hosting & Micro-Services
- High Performance Analytics & Insight-as-a-Service
- Uptime Assurance - 24x7 support

ANALYTICS AND TRACK & TRACE

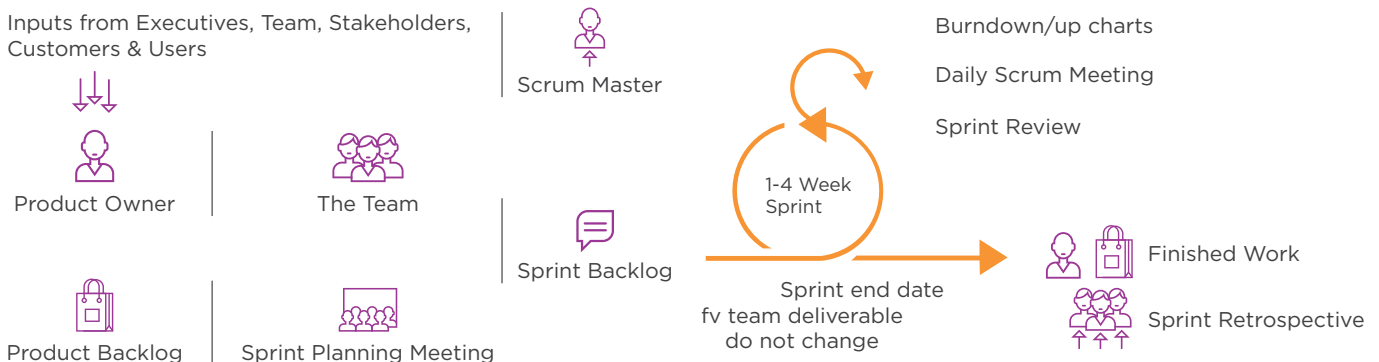
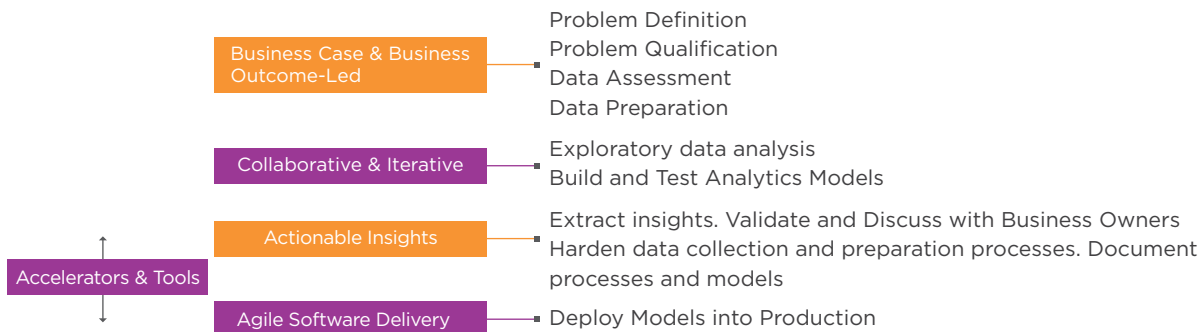
ANALYTICS: THE INTELLIGENCE BEHIND IoT

IoT analytics is at a tipping point today. IoT enables visibility & access to information from various sources, internal to the company, as well as external, structured as well as unstructured data. Many IoT applications rely on Complex Event Processing (CEP) to analyze streaming data and create alerts based on events & thresholds and simple business rule. However, analytics for IoT will continue to increase in complexity as applications access more and more data. An example of this is Manufacturing, where applications such as Predictive Maintenance and Predictive Quality are rapidly gaining traction. The resulting value from applying advanced analytics across enterprise asset value chain will be enormous.

ADDRESSING THE CHALLENGES IN IoT ANALYTICS JOURNEY

| BUSINESS CASE | DATA MANAGEMENT | ANALYTICS PLATFORM | SECURITY & PRIVACY |
|---|---|--|---|
| Business value from Analytics Use Cases (simple and complex) Linkage to business strategy and business drivers Integration of Analytics with business processes Understandability and Trust of Analytics ("Why should I trust your insights?") Operating Model (e.g., device management) | Growing volumes Data "monetization" -90+% of IoT data is not useful Data governance Data retention approach (policies, regulatory requirements, business need) Data ingestion Data cleaning and preparation Data integration Data analytics at the "edge" of the network | Manageability and scalability Ability to support increasing volume, variety and velocity of data • Data at Rest • Data in Motion • Internal and External Data Ability to support wide range of Analytics Use Cases - from simple to complex • Real-Time / Streaming • Batch Edge & Cloud Analytics Enable IT/OT Integration | Regulatory requirements Multiple layers of security Chip-level and device-level security Access Security Authentication, Authorization and Accounting Intrusion detection Anomaly detection Query-specific differential privacy (e.g., row-level in a table; masking of values, etc) |

OUR APPROACH TO SUCCESS: AGILE ANALYTICS



PROOF POINTS



A Leading global aircraft design and manufacturing company gains best-in-class service experience with predictive maintenance analytics

CUSTOMER CHALLENGE

- Deteriorating performance metrics in reliability and Service management
- Lack of harmonizing pool of aircraft sensor data
- Manual processes of analysing unstructured data

HCL VALUE PROPOSITION

- Built analysis capabilities through data correlation, acquisition, cleansing and harmonization
- Adopted predictive models for data grouping
- Deployment support for consulting, Infrastructure and implementation

VALUE DELIVERED

- 97.9% improvement in reliability
- Reduction in time to insight from 30-90 days to 1 day
- 75% accuracy achieved in identifying service interruptions
- Established Data Analytics-as-a-Service model



Establishment of revenue generating services for French multinational aero & defence electrical manufacturing service company

CUSTOMER CHALLENGE

- Gaps in real time fleet monitoring
- No data analytics report of aircraft system health
- Requirement gap analysis of operations messaging

HCL VALUE PROPOSITION

- Developed data integration with satellite communication from Aircraft to Ground using GCMS
- Portal customization and content management solution
- Captured performance metrics from post flight log files

VALUE DELIVERED

- Resulted in new revenue generation services
- Real time airlines payment processing system



Enhancing Global operation safety & security for a leading Aircraft customer

CUSTOMER CHALLENGE

- Increase in number of accidents due to vehicle collision
- Lack of automated blast roll-call system based on geo location of flight operators
- Machine downtime caused by malfunctioning & abnormal ambient conditions

HCL VALUE PROPOSITION

- Smart Jacket capable of detecting proximity vehicle and sending notification to Smart Helmet.
- Smart helmet broadcasts the blast roll-call message
- Tracks flight operators at accident prone zones and avoid false litigations

VALUE DELIVERED

- Increased productivity by reducing blast roll-call time from 3-4 hours to 5 minutes
- Reduced number of accidents leading to reduction in false insurance claims.

OUR IPs AND ACCELERATORS

| | | | |
|--|--|---|---|
| <p>DDX</p> <p>Accelerator for device IoTization</p> | <p>IDEA Gateway</p> <p>Reference design for an intelligent device</p> | <p>Pangea</p> <p>Data Analytics platform</p> | <p>Platform Acceleration Suite</p> <p>Build next generation cloud services</p> |
|--|--|---|---|



Members of the Industrial Internet Consortium (IIC) help create the future of the IoT industry. IIC members have a voice in setting the standards, best practices, and processes of the Industrial Internet.

WHEN YOU START WITH A TOP-RATED VALUE PROPOSITION, THE RATINGS FOLLOW



Visit www.hcltech.com/iot for more information

To collaborate over a complementary IoT roadmap workshop, email us at iotworks@hcl.com