



# IoT In Quick Service Restaurants

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Sensing the value in information



# ANALYTICS IN QSRs

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The role of humans in many areas of QSRs is dwindling. People are being replaced with sensors, actuators & gateways. These generate data from the Edge, to be measured, & thereby, 'valued'. They also take decisions on behalf of humans with some preset rules, artificial intelligence or machine learning methods.

# HOW DATA ANALYTICS HELPS



## Food Safety

Cooking of food can be affected by human error & faulty equipment. Food quality is affected if the cooking sequence is interrupted by either. Result – low quality end product that might not meet standards,

When the equipment is faulty, having access to better diagnostic data means that problems can be resolved with vendors over phone. If a service call is required, accurate diagnostic data means replacement with the right parts.



## Kitchen Monitoring

Kitchens are getting smarter thanks to IoT based apps. Managers can monitor cooking as well as supply of ingredients. IoT based apps can help in monitoring cooking oil quality as well as the amount used in dishes. It can also monitor the food quality inside refrigerators.



## HERE ARE SOME MORE WAYS

Many restaurants have started using Bluetooth temperature monitoring systems to ensure their food & equipment are working well. Using probes & sensors, restaurants can manually or automatically measure the temperatures of their equipment, as well as Co2 levels. Managers can program customized limits for each food & equipment, & be alerted if any temperatures or emissions are beyond acceptable threshold.

These sensors can also wirelessly record readings in a HACCP log. Wireless temperature systems ultimately take a proactive approach to food safety, helping restaurants to avoid product loss, & most importantly protect customer safety.



# MONITORING QSR CHAIN

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Using sensors & cameras, IoT systems can build an entire surveillance network around your QSR chain. Real-time monitoring activities can be carried out at scale for such multiple restaurants, updating managers with real-time video analytics & AI-based audits. This gives real-time control over operations.

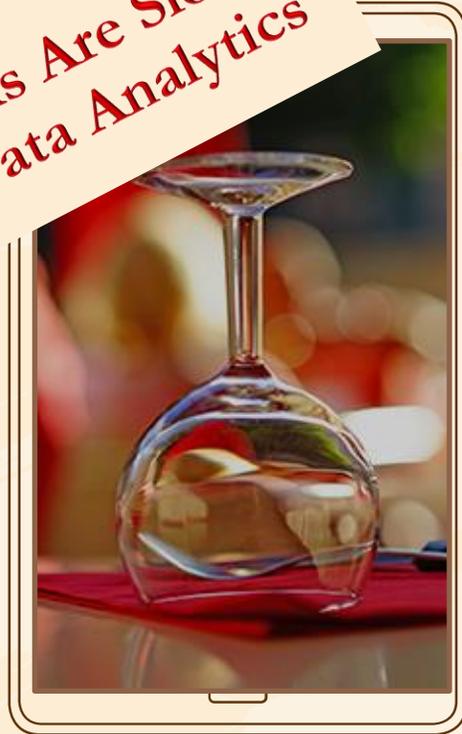
- ❑ You can identify activities that are hampering productivity & implement a solution to optimize processes that enhance operations.
- ❑ You can control the energy consumption of your restaurant by monitoring the amount of power that is being consumed at all times.
- ❑ You can get notified of high power consumption with real-time alerts so that corrective action can be taken. This can help optimize costs & power consumption by reducing wastage & allocating power resources to the right place at the right time.

# QSR & DATA PROBLEMS

Moving from Bites to Bytes



*Why Some QSRs Are Slow  
In Adopting Data Analytics*



Main reason - a conflict on the ground between 'legacy systems' & new technology for the collection & processing of data. For eg: some QSRs acquired costly point-of-sale solutions prior to the more significant advancements in metrics & data, so are hesitant in replacing the latter.

# HOW EXPRESS ANALYTICS CAN HELP

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Analytics @ the speed of thought

## Why

Because, EA solution creates significant value by providing, even combining different services that collect or generate information from a unit like a restaurant. All such data can be processed on a single smart gateway so the growing volumes of data or addition of more devices is no hurdle.

## What

Services range from data warehousing, to reporting, to analysis. Includes data cleansing & profiling, & the development of data marts. Scalable & reliable.

## How

EA helps use any kind of data generated within your store to understand & optimize your work processes. Solution can also help 'localize' centre-managed operations. Build-Transfer-Operate model available.

# EXPRESS ANALYTICS ®

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Founded : 1999

Core competence: Data warehousing & analytical solutions. Domains: Hi-tech, Finance, Healthcare, Utilities, Entertainment  
Proven track record of executing complex large scale projects for **Fortune 500 clients**.

## Our Clients



## Our Partners



# Express Analytics® Service Model

<b>Global Delivery Model</b>	<b>BI as a Service: BIaS (in-cloud)</b>
<ul style="list-style-type: none"><li>✓ Hourly rate based on roles of the consultants for the complete delivery of the project onsite.</li><li>✓ Hardware, software &amp; space provided by client.</li><li>✓ Weekly progress reporting</li><li>✓ Rapid prototyping &amp; checkpoint validation</li></ul>	<ul style="list-style-type: none"><li>✓ Express Analytics® will host the customer database and all the associated software, hardware, communications and services.</li><li>✓ Entirely web based delivery model</li><li>✓ No investment in building infrastructure</li><li>✓ On-site and offshore model</li></ul>
<ul style="list-style-type: none"><li>✓ Analysis, Design, integration and project management done onshore</li><li>✓ Development, QA and testing done offshore</li></ul>	<ul style="list-style-type: none"><li>✓ Math intensive analytics services offered from offshore</li><li>✓ Express Analytics® maintains the integrity and security of customer data</li><li>✓ Deploying the production servers onshore in the United States</li><li>✓ Offshore team has access to development servers</li></ul>



# SOME CASE STUDIES

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## How EA helped these clients

### Solar Turbines

**Situation:** Solar Turbines had an enterprise data warehouse. However, the data loading process was taking 12 hours, & so data was 2 days behind for Japan & Australia. The warehouse was unavailable for 12 hours a day.

**Critical Issue:** How to reduce the data latency & increase the data freshness for the rest of the world, load the data four times a day?

**Goal:** Solar Turbines needed to have a single source of information that was fresh & accessible 24/7/365.

**Solution:** A Informatica ETL architecture & redesigned data mart helped capture parts & product warehousing information from the ERP worldwide, accessible from anywhere.

### Sempra Energy

**Situation:** Sempra Energy wanted to build an enabling system to optimize all aspects of power generation, & monitor biz performance. Financial, operational & billing information were, however, in silos.

**Critical Issue:** Since AC power cannot be stored in large amounts, Sempra needed to operate in a zero inventory, zero latency mode. Thus, all aspects of the business need to be optimized in real time.

**Goal:** Sempra wanted enabling infrastructure that would allow an event driven, proactive & reactive operation. Also wanted to capitalize on small fluctuations of market prices to make major gains.

**Solution:** EA enabling infrastructure allowed that communication to take place, & spot market sales made for highest profitability/day.

# THANK YOU

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