

# Reliability Testing Analysis

# Octillion Technology Inc.

**We convert data into information...**

- Incorporated in 2006 in California
- Registered in India in 2007
- Focused in decision making solutions, using:
  - Advanced data analytics, e.g. Natural Language Processing (NLP)
- Focused in Manufacturing, Finance, Healthcare and Homeland Security
- IT Infrastructure Services
- Highly experienced and qualified team

**Octillion is committed to providing leading edge business and technology solutions to customers...**

# Octillion Value...

**Making the right decision at the right time is the biggest challenge executives, managers and administrators face**

*Whether in private enterprises or in government departments, managers need real-time and accurate information to make the right decisions. Octillion Technology solutions enable sound decision making by providing accurate information in real-time*

# The Problem

# Current process...

## Excel based processing of reliability testing and analysis....

- **Tester data converted to Excel format**
- **Charting of parameter values in Excel:**
  - Macros transform each test data into charts
  - Parameter values are charted against test-times
  - Users given access to view Excel charts

# Process limitations...

## Excel can go only that far....

- **Highly skilled engineering resources used in information processing**
- **Limited scope:**
  - Multiple cross references and analysis not available
- **Limited scalability and no flexibility**
- **Limited or no capability of statistical analysis**
  - Not usable for executive decision making
- **Limited and inefficient for tracking field failures**

# The Solution

# Clear Options



Alert

Control

Knows why, how

OR  
OR



After the fact

Inundated with data

Know what

# Reliability testing analysis (RTA): Objective

## Development of automated real-time analytical solution...

- **Multi-dimensional analysis for:**
  - Executive decision making
  - Advanced statistical analysis
  - Test and quality engineering usability
- **Personalized and easy to use dashboards**
- **Instantaneous report generation without IT assistance**
- **Easy sharing of information**

# Solution features...

## User friendly solution with least amount of manual intervention...

- Secure access to authorized personnel only
- Browser based solution: Remotely accessible
- Single data repository with back-up solution
- Expandable to different corporate functions
- Elimination of errors: minimal manual processing of critical data

# Description

## User friendly interface...

- **Quick selections using clickable choices**
- **Nested dimension selection:**
  - Monthly average of parameter values for devices undergoing test, or
  - Averages of parameter values between different test locations for a specified period
  - Median values of parameters tested on different testers
- **Type of chart selection or text report**
- **Export to PowerPoint**
- **Create or change dashboard: User driven**

# User-Interface Screen Example...

**Easy to use, easy to configure interface...**

The image displays a user interface for configuring a chart. On the left side, there are several configuration options, each in a yellow button:

- Chart Type (red button)
- Dimensions (dark blue button)
- Period (Dates)
- Device Range
- Location
- Test Type
- Tester Type
- Lot#
- Color Temp
- Operator

At the top, there are two red buttons: "Parameter Groups" and "Statistical Functions". To the right of these is a large blue box containing the text "Check boxes for individual parameters selection".

The main area of the interface is a large light blue rectangle labeled "Chart Area".

# Business Value

## Informed and accurate decision making...

- **Decisions based on real-time information:**
  - Profitability: Save 50% of your executives' and managers' time
  - Enhance ROI: Avoid wrong decisions
  - Drill down analysis: Identify problem areas and situations
- **Lower the risk of data security**
  - Corporate data stays in controlled environment
  - No downloading of data necessary in individual PCs for analysis
- **Lower business liability**

# Delivery

# Implementation steps

## Phased implementation...

- **Develop specifications**
  - Detailed description for each dimension
  - Describe features and functions in detail
- **Develop implementation plan**
  - Three phase implementation lasting minimum 8 weeks each
- **QA and stress testing**
- **Training and documentation**

# The Process...

## RTA manages the following...

- Device parameter records for the complete set of parameters
- Lot parameter records to accumulate data relating to test lots
- A centralized, scalable, extensible, and supportable relational database to support the data
- Analytics engine to provide required reliability analysis
- Browser based user interfaces to:
  - Manage user access
  - Lot formation input
  - Selection of the type of analysis on device parameters:  
Standard values or Normalized values
  - Graphic display of analysis

# RTA Solution

## Octillion delivers...

- Solution configured to testing process
- Implementation of a lot parameter database
- Data extraction, transformation and loading to the chosen database
- Tester output data transfer interface configuration to database, online and in real-time
- Transfer of historical data of tester output to the database
- Implementing analytics to provide the following:
  - Charting of all parameters values (absolute and normalized)
  - Configuring user interface to select the device numbers, test type, type of data and parameter to chart
  - Configuration of user interface for creation of a lot
- Testing and troubleshooting
- Application rollout
- Training for end-users

# Octillion Resources

- Octillion delivers solutions using highly qualified teams of engineers.
- Our analytics team has highly qualified members (Ph.D.s in engineering, computer science, Artificial Intelligence (AI), Mathematics and Statistics), who work closely with the AI teams from Carnegie Mellon University.
- Our engineers filed 5 patents last year and 3 more are pending.
- Our engineers have published in several international journals.
- In addition to the cutting edge R&D, our teams are involved in solving real world problems in various verticals including retail, engineering, telecom, financial and healthcare domains.

# Contact information

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# Questions

