

# Automated Guided Vehicle Experience

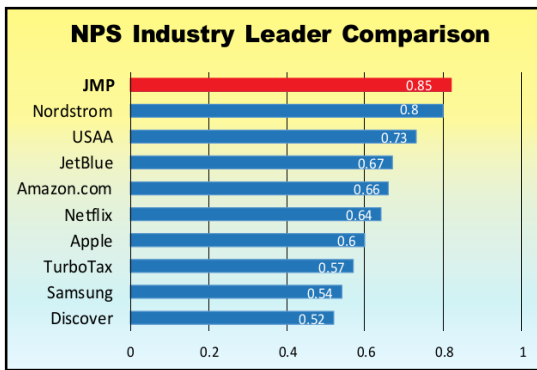


**JMP Solutions**

## About JMP

- Serving national customers locally: 14 business units throughout North America, targeting Industrial Fortune 1,000 companies since 1987
- More than 20,000 projects completed to date
- Strategic partnerships with Rockwell Automation, Honeywell, and FANUC
- Top 10 largest Controls System Integrator in North America (SI Giants List from CFE Media)
- **Core Competencies and Applications Where We Excel:**
  - Automated Guided Vehicles
  - Control System Integration
  - Information & MES
  - Networking Infrastructure and Security
  - Process Automation
  - Robotic Systems

## Our Differentiators



Source: 2016 Satmetrix Net Promoter® Benchmark Study



### First Priority: Customer Satisfaction

- Address customer issues daily, from each employee to the Executive Team
- Net Promoter Score (NPS)



### Extraordinary Customer Experience









- Guaranteed Performance
- Exceptional Communication
- Radical Commitment






### Execution Excellence – Every time, all the time!

- Project Management
- Change Management
- Risk Management
- Multi-Site Execution

## Serving National Customers Locally

- Burlington  (905) 631-6660
- Calgary  (403) 475-2886
- Cambridge  (519) 622-2505
- Dallas  (972) 570-3070
- Houston  (832) 647-0024
- Information Division   (513) 795-9082
- Lexington  (519) 239-8913

- London  (519) 652-2741
- Montreal  (514) 248-1857
- New Jersey  (873) 808-8550
- Philadelphia  (610) 524-0500
- San Antonio   (210) 930-6060
- Smart Robotics Division  (519) 520-0549
- Toronto  (905) 851-8700



[www.jmpsolutions.com](http://www.jmpsolutions.com)

# Automated Guided Vehicle Experience



JMP Solutions

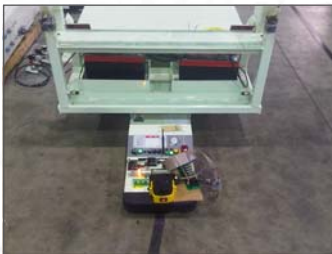
## What is an AGV?

- Unmanned Autonomous vehicle
- Uses some sort of guidance system (tape, lasers, virtual map)
- Generally deliver parts/product



## Why use AGVs?

- Reduce time spent on non-value add functions (Muda)
- Improve throughput
- Lower operating costs
- Flexibility and optimization in routing
- Easily adaptable to changing products/locations
- Safety of employees



## Things to Consider

- Maximizing process safety
- Which functions add value requiring human participation
- Part delivery optimization
- Anywhere from \$50k to \$150k per unit including integration



## Implementation Examples

- Engine Prep Line
  - 16 AGVs carrying engines and transmissions on a custom dolly
  - Operating as a production line for parts of the route
  - Battery charging at end of the shift
  - Allows for flexibility in the part locations
  - Improved safety
- Bulk Ingredient Delivery
  - 2 OTTO SDVs carrying ingredient sacks
  - Autonomous vehicles, follow a map
  - Improves safety, throughput, and flexibility
  - Decreases inventory and WIP
  - Availability of product tracking and feedback for business systems for order filling, ingredient inventory, and production throughput
- Engine Delivery
  - 40+ AGVs delivering engines and front axles
  - Opportunity charging
  - Allowed for flexibility in migrating to a new line



[www.jmpsolutions.com](http://www.jmpsolutions.com)