The Driving Force... GM IT


Jeff Liedel, Executive director and CIO, Global emerging markets
General Motors Information Technology
BACK to the Future of IT

UMTRI 2008 ~ 2012 ~ 2015
General Motors

• Size and scale of a Fortune 6 organization
  • 2014 sales of more than 9.9 million vehicles, 3.4 million in North America
  • Production in 31 countries and doing business in more than 120 countries
  • 218,000 employees and >20,000 dealers globally, 169 manufacturing/assembly facilities worldwide

• A big family
  • GM brands include Chevrolet, Cadillac, Buick, GMC, Holden, Opel, and Vauxhall
  • In China, GM markets under Baojun, Jiefang, and Wuling brands
  • OnStar offers breakthrough technology for navigation, entertainment, diagnostics, safety and security

• The new GM – a success story
  • 2014 - $155.9 billion in revenue; to date, 22 consecutive profitable quarters
Great products
... but don’t take our word for it

- Chevrolet Colorado 2015 Motor Trend Truck of the Year
- GMC Canyon earned Autoweek’s Best of the Best/Truck 2015
- Chevrolet Camaro Z/28 is an Automobile Magazine All-Star 2015
- Cadillac CTS is a Car and Driver 2015 “Ten Best”
- Chevrolet Corvette Stingray is a Car and Driver 2015 “Ten Best”
- OnStar 4G LTE Wins Popular Science ‘Best of What’s New’
- Chevrolet Spark, Volt, Malibu and Equinox have been named 2015 Insurance Institute for Highway Safety Top Safety Picks
These forces within the industry are still critical

• Electrification of vehicle - Chevrolet Volt

• The increasing role of Information Technology

• Connectivity of vehicle, Internet of Things – OnStar

"Intelligent and connected vehicles are an engineering reality, and the path toward our next generation of cars, trucks and crossovers."

..Mary Barra, ITS World Congress
How did the other “future” predictions go?
First generation Chevrolet Volt

How did the other “future” predictions go?
The all new second generation Chevrolet Volt

2016 Chevrolet Volt: offers a spacious interior and an estimated electric range of 50 miles, with a new two-mode drivetrain shared with the 2016 Malibu hybrid.
The **Spark EV** turns heads and turns new corners in providing confidence, control and connectivity with 80+ miles of range. One of the very few battery-electric vehicles to offer DC quick charging as well as conventional 240-Volt charging.

The **Chevrolet Bolt EV** was announced at the 2015 Detroit Auto Show, featuring a range of 200 miles and a base price of $37,500 before incentives, providing both a longer drive capacity while still maintaining affordability. The 2017 model will be built at GMs' Orion Assembly plant.
How did the other “future” predictions go?

>493 Million
Service interactions as of 2012

MONTHLY INTERACTIONS

>2.6 Million
Turn-by-Turn Requests

~20,000
Emergency Responses

>2,600
Automatic Crash Cases
How did the other “future” predictions go?

- New and improved RemoteLink lets you control many of your car’s features from your mobile device
- Wi-Fi® hotspot, connecting up to seven tablets, laptops or mobile devices at 4G LTE speeds
- New! OnStar AtYourService With the press of your blue button, connect to offers and savings for restaurants, retailers and more along your route.
GM Global Continuous Safety Strategy

Before

Active Safety
Crash Avoidance Systems

Radar, camera and ultrasonic sensors monitor front, side and rear directions to monitor potential crash situations and assist the driver

During

Systems Help Absorb Energy from Impact

After

Post-Crash Occupant Protection Systems

Automatic Fuel Sender Shutoff
Automatic Crash Response
Automatic Flashers
Automatic Door Unlock
ACTIVE SAFETY TEST AREA
V2X could benefit 80% of non-impaired crashes.
CONNECTED CARS
TRANSFORMING the WAY we DRIVE
Evolution of GM IT
The journey continues

Gen1 1984-1996

1984: GM buys EDS
IT runs as separate business

Gen1 Outsourcing 1984-1996

1996 - First CIO in history of GM
2,000 GMIT employees

E-Business Focus
Global Common Systems
Global Telecom
China
Eastern Europe
OnStar
Vendor Complexity/Integration Challenges

Gen2 1996-2003

Supplier Recontracting
Offshore Outsourcing
Business Decline
Emerging Markets
Green Movement
Bankruptcy
Viability Plans
Brand Restructuring
Mobility
1,700 GMIT employees
~ 20,000 supplier employees

Gen3 2004-2008

New GM emerging
Shanghai OnStar

Gen4 2008-2011

Enterprise Data Centers
Insourcing
Innovation Centers
Shadow IT

Gen5 2012-2018

Currently >10,300 GM IT employees, going to ~12,000

Green Movement
Bankruptcy
Viability Plans
Brand Restructuring
Mobility
1,700 GMIT employees
~ 20,000 supplier employees

IT Transformation
Enterprise Data Centers
Insourcing
Innovation Centers
Shadow IT
Currently >10,300 GM IT employees, going to ~12,000

The journey continues
GM is not your typical 100+ year old company

- Delivering innovation every day to global teams in engineering, manufacturing, marketing and finance through a completely new model:
  - 90% of GM IT insourced, with 80% focused on innovation
  - Growth from 1,500 to more than 10,000 GM IT employees between 2012 and 2015 (that’s one way to change corporate culture!)
  - Four U.S. based innovation centers offering diverse and interesting locations for employees to live, thrive and contribute to the success of the company
Insourcing swings back into style

When General Motors decided a few years ago that it would insource its call center operations, the auto-making giant decided to fashion a new “customer engagement center” with more than 300 jobs on the campus of its Technical Center in Warren, MI.
GM IT: Driving innovation

2012

90% OUTsourced

80% IT staff running day-to-day operations

1,400 GM-badged Employees

1 Innovation Center

supplier-managed data centers

23

2018

90% INsourced

80% IT staff actively engaged in innovation

>12,000 GM-badged Employees

4 Innovation Centers

2 GM-managed data centers
Live where you love to work

Why these locations?
- Within 500 miles of 75% of IT talent
- >50% of top computer science colleges within ~200 miles
- Leverage mix of college and experienced hires

Locations:
- Detroit
- Phoenix
- Atlanta
- Austin
Precision IT cost

Operational and sustaining cost

New system development and deployment
The road ahead: IT transformation objectives

• Double the speed of delivery
• Triple innovation (number of projects)
• 10X business value (revenue of IT)
• Data center transformation
• Global, common applications
• Application simplification
• Extreme integration
• Reduce risk, increase reliability, protect the enterprise
• Enable rapid business transformation
• Enterprise data warehouse
  • Information, Information, Information
Building a culture of innovation

Hackathons are hosted at each Innovation Center annually to enable IT employees to learn new technology, meet new people and encourage creative thought that solves business challenges.

Gears for Geeks encourages teamwork and combines the logical with physical; teams compete with time limits for building, coding and executing their creation.

Hackathon encourages team building, learning and having fun.

The Innovation Challenge is an annual competition that brings global IT teams together to compete for their real world idea to be brought to reality.

Last Idea Standing is a fun, inspiring, idea-generating event that encourages ideas to be presented in a raucous and entertaining way.
Partnering to deliver value to GM

**World Platform**
All General Motors brands sites development and hosting in-sourced by GM IT; realized significant performance improvements and savings

**Shop · Click · Drive**
Provides consumers the ability to complete most of the vehicle purchasing process online; GM IT developed and hosted. 
*More than 32,000 vehicles sold since November 2013*

**Owner Center**
Insourced portal enables customers to track service history, maintenance schedule, warranty, recalls and OnStar diagnostics.
Partnering to deliver value to GM

**CARS**
Insourced and transformed North America contact center applications in support of GM Contact Center Strategy; integrates with enhanced CRM platform

**Vehicle Health Mgt**
Provides in-vehicle diagnostic reports; owners can schedule maintenance from the vehicle without reliance on a smartphone. **27 TB of vehicle information collected to date**

**Global Logistics**
Support global processes for route/freight optimization; procurement; contracting and freight payment; and supply chain visibility to raw materials and finished goods.
High Performance Computing delivers velocity

• Global ranking within top 25 for HPC
• Computing capacity enables the engineering community
  • Crash and safety simulations
  • Powertrain simulation, thermal analysis, and other modeling
Choosing is losing

Transforming IT = moving on multiple fronts... simultaneously

- An insourced world class IT team
- Nimble innovation centers
- Delivering on commitments
- Need for speed
- No business interruption
- Focus on direct business value
- Enterprise license agreements
- Integrated data, readily available for timely business decisions
- Shadow IT incorporated into the organization
What we believe...

- Real innovation happens with IT professionals tightly aligned to company strategy.
- Real business applications on an enterprise scale DO NOT come from venture capitalists.
- Modern, innovative companies have a good mix of experienced IT professionals and college hires who are forward-thinking and less resistant to change.
- Sustained competitive advantage comes from a focus on continuous improvement, creative process and technological change.
- IT is a strategic corporate asset with speed of innovation a major underlying factor of success.