

A blurred photograph of a crowd of people walking in a hallway, likely at a conference or educational session. The image is out of focus, showing various colors of clothing and the movement of people. A semi-transparent grey banner is overlaid across the middle of the image, containing the title text in blue. At the bottom of the image, there is a solid blue horizontal bar.

***Elevator Association of
Minnesota
Educational Session***

Jeff Yeager - Motion Control Engineering

Director of Sales – North America

Steve Nero - Imperial Electric

Sales Manager – Elevator Motor Programs

THE GREAT STATE OF MINNESOTA!

- Were excited to see you. (This is my first Customer Visit since last February due to Covid-19 restrictions).
- I am thrilled to be back in MN. I was born in Minnetonka. Spent my early youth here.
- Professionally – MCE has had so much success in Minnesota over the years. We are very fortunate to work so closely together with Industry personnel in MN. As I started my career as the Midwest Regional Sales Manager, I am especially fond of MN – I have many Colleagues and Friends in this market, and we have enjoyed so much success together.

Presentation Agenda

About NIDEC/MCE

Elevator Industry Revenue

Overview of Market

Non-Proprietary Defined

Lifecycle Costs

Summary and Discussion

The format of our Presentations today will be relatively informal as we seek to learn from each other. We want to foster discussion so that we can all benefit.

Nidec Corporation Japan Profile

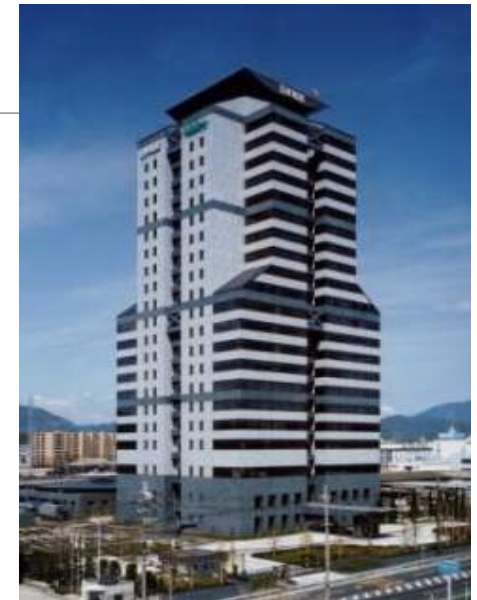
Founded - July 1973

Nidec is group of 311+ companies worldwide

Over 100,000 employees

Nidec is the world's No 1 motor manufacturer; annual production of over 3 billion motors

2018 Sales of \$12.6 B, Market Cap ~ \$40B

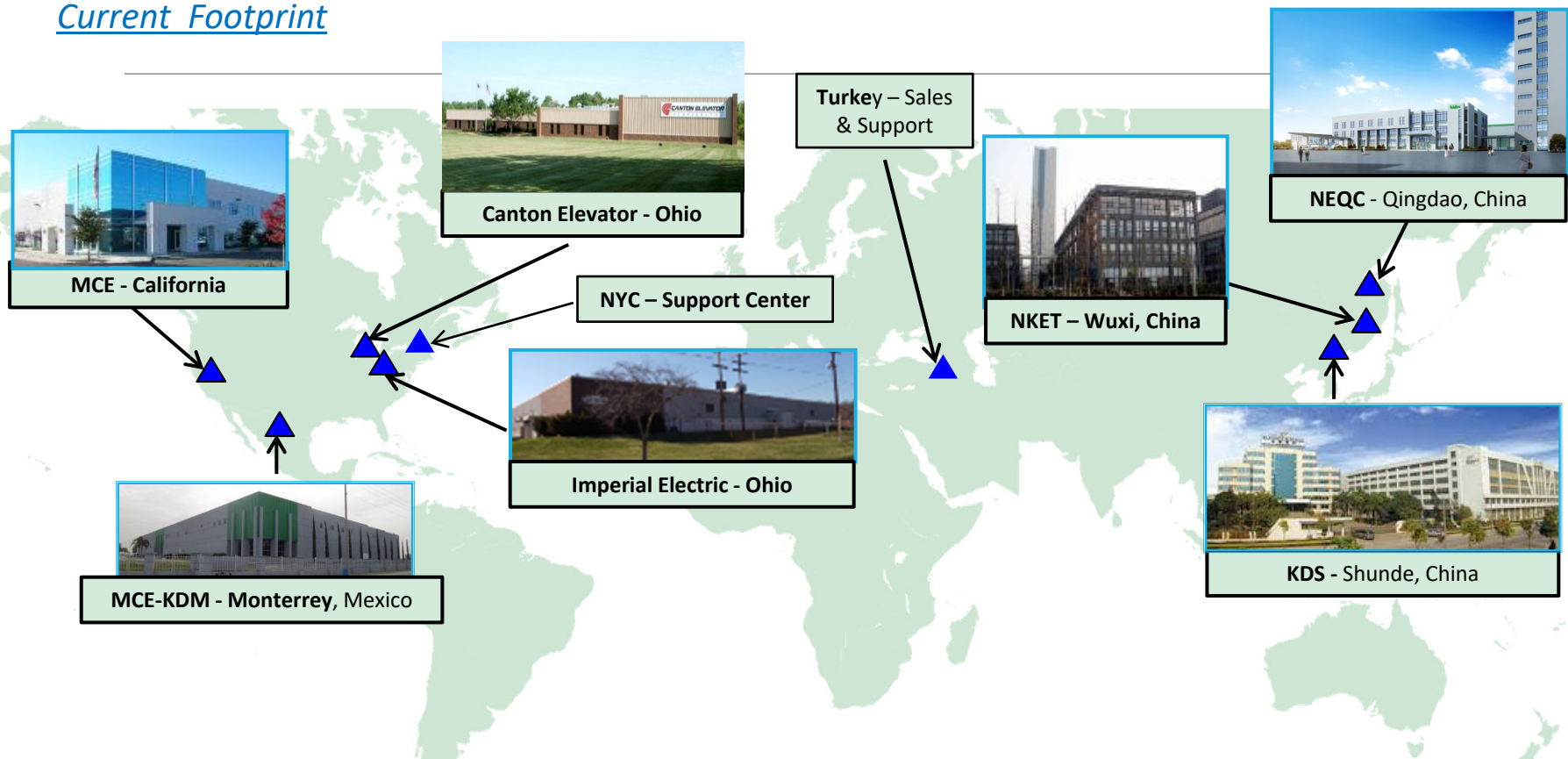


Nidec Headquarters Kyoto, Japan



Nidec Elevator Business Unit

Current Footprint



Introducing MCE

Established in 1983

Two engineering and manufacturing facilities; California and Monterrey, Mexico

400 + Employees

Over 200,000 controllers installed globally

Acquired by Nidec in Nov 2012

Serving Multinationals and Independent elevator contractors

Packages Controls + Motor/Machine + Door System + Traveling Cable + Monitoring + DBD System, etc.

Field Proven, Stable and Reliable Product Line

Largest Engineering and Technical Support Team in the Industry

In-house R&D

Wide range of custom applications



MCE
Motion Control Engineering®

Notable Projects



WASHINGTON MONUMENT
Washington D.C., District of Columbia, USA



SUPREME COURT OF THE UNITED STATES
Washington D.C., District of Columbia, USA



STATUE OF LIBERTY
Liberty Island, New York, USA



YALE UNIVERSITY
New Haven, Connecticut, USA



PRINCETON UNIVERSITY
Princeton, New Jersey, USA



11 WALL STREET
New York, New York, USA



CARLSBAD CAVERNS
Carlsbad Caverns Park, New Mexico



Elevator World, Inc. - MCE Project of the Year Awards

PUBLISHER FOR THE INTERNATIONAL BUILDING TRANSPORTATION INDUSTRY

CATEGORY 2

Elevators, Modernization



2013 PROJECT OF THE YEAR

Federal Reserve Modernization Washington, D.C.

submitted by Jack C. Higgs, Quality Elevator Co., Inc.

The Federal Reserve in Washington, D.C., contacted Quality Elevator Co. to modernize five Westinghouse gearless traction machines and one geared machine in the historically sensitive areas of the Eccles Building. The design is grounded in Greek and Roman architectural elements. When completed in 1906, it was originally four stories. In the 1990s, a fifth floor was added to it. As part of the latest modernization, Quality Elevator was tasked with updating 208-VAC controller feeders to supply 480 VAC to the new AC permanent machines. The most unique challenge of the project was the two basement chutes. Quality Elevator redesigned the existing floor-mounted DC hoist motor to the new Imperial AC PM machine to the existing machine room. The new invention, while maintaining alignment with the existing roping system. Qo assembled a design team of local engineering firms - Ancona Associates, M Engineering's (MCE) Machine-Room-Less Engineering Department and Inq. The company determined the force of the ropes on the AC PM machines and the mounting feet. To accomplish this, rotating the machine 90° and maintain with the existing infrastructure and clearances were required.

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2013 Project of The Year
Federal Reserve
Washington D.C.

2017 Project of The Year

Metropolis Trust Building
San Francisco

The Metropolis Trust Building
San Francisco, California

Unique challenge overcome in busy 110-year-old building.
submitted by Rick Niang, Star Elevator, Inc.

PROJECT of the YEAR 2017

ELEVATORS, MODERNIZATION



San Francisco's 15-story Metropolis Trust Building was constructed in 1907 in the wake of the Great 1906 San Francisco Earthquake. Today, it sits among the most expensive real estate in the city. The designated Category 1 Historic Landmark has a vertical-transportation system still unchanged in its past, installed more than 100 years ago. It was not operating reliably, and building management was intent on tenant satisfaction, safe operation and improved overall longevity.

Star Elevator, Inc. was tasked with retrofitting machinery to make 21st-century safety concerns meld with the old equipment. The job involved outgassing a perplexing enclosure cable gearless basement traction elevator system and converting it into a modern overhead traction variable-frequency-controlled AC gearless system. We completely reengineered the existing offset basement design and added microprocessor AC drive and controller.

Due to the placement of the machines under the basement and the need for proper rope loadoff of the overhead sheaves, the counterweights did not run in the same hoistways as the cars, making for a long, complicated rope scheme. In fact, each car had more than 2¼ mi. of hoist rope. Further complicating matters was the fact that there were no building blueprints available. Thus, Star turned to Rick Niang of RCB Elevator Consulting, LLC to draw up a detailed plan.

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Category 1

Elevators, New Construction

The Statue of Liberty – Life and Safety Upgrades, Liberty Island, New York

submitted by Douglas J. Muttart and TinaMarie Cortina, Liberty Elevator Corp.



Construction crews delivered the TDS motor elevator during the 2011/2012 restoration on Liberty Island.

The Statue of Liberty is synonymous with American freedom. When the terrorist attacks of September 11, 2001, occurred, that freedom was visibly shaken. Despite those horrific events, Americans emerged with a sense of resilience and determination reflective in our nation's history of prevailing under the direst of circumstances. Throughout the chaotic few months that followed, Lady Liberty stood tall in a constant reminder that we would persevere.

Due to increased national security following the terrorist attacks, the statue was closed for three years. Only in 2009 was its crown reopened to the public. In an effort to make the statue a safer and more accessible attraction for visitors, Ken Salazar, former secretary of the Interior, vowed to continue upgrading the interior systems and bring them up-to-current code.

In 2011, the request for proposal for the Statue of Liberty's Life and Safety Upgrades was announced. This comprehensive upgrade included wider stairways, upgrades to the fire-suppression systems, and a complete overhaul of the vertical-transportation systems. This included removing the existing double-deck hydraulic passenger elevator and replacing it with a new machine-room-less (MRL) passenger elevator, installing a new Americans with Disabilities Act-compliant handicapped lift and installing a state-of-the-art emergency rack-and-pinion elevator. All elements of this project were required to adhere to a strict "Buy American" policy. This meant that every nut, bolt and screw had to be derived from facilities in America.

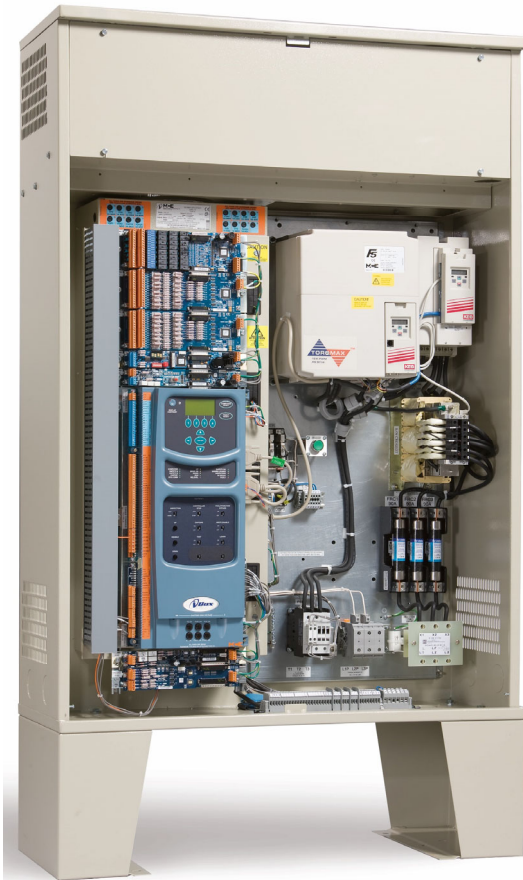
Joseph A. Nardi Construction Corp. was awarded the project as the general contractor and was overseen by Adina Construction, North America, which was in charge of the overall construction management by the National Park Service. When choosing its prime elevator contractor, Nardi understood the importance of choosing a company with a reputable history and the required experience needed to contract within the prevailing conditions of a national landmark. Liberty Elevator Corp. was chosen.

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2014 Project of The Year
Statue Of Liberty
Liberty Island – New York

Controllers

iControl Traction Control



Application:

- Up to 1,800 fpm DC, 1,400 fpm AC, 96 floors, Front/Rear openings, simplex/groups to 15 cars
- Designed for high performance applications
- Powerful software-based dispatching engine w/AI to optimize dispatching/reduce wait time
- Highly configurable and programmable to meet building requirements
- Battery Rescue Option (AC only)
- Connects to MCE's remote monitoring/reporting system
- Connects to MCE's Destination-Based Dispatching (DBD) System

Controllers

Motion 4000 AC Traction Control



Application:

- Designed for mid-range applications
- Up to 500 fpm, 32 floors, Front/Rear openings, simplex/duplex, groups to 6 cars
- Leveling and slowdown functions are virtual within the absolute landing system
- Serial wiring for car and hall fixtures – reduces traveler wires
- Universal I/O (24 to 120 V AC/DC)
- Onboard diagnostics and event log
- Battery backup option
- Connects to MCE's remote monitoring/reporting system

ELEMENT AC Traction Control

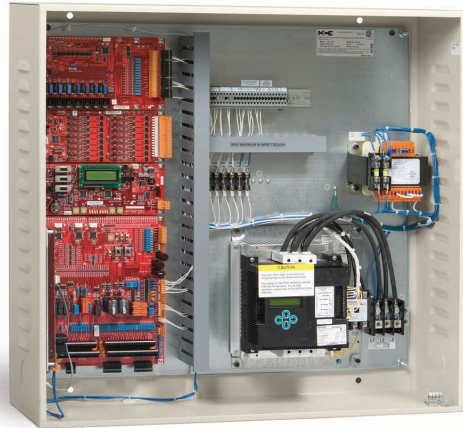


Application:

- Designed for low-mid range applications
- Up to 350 fpm, 32 floors, Front openings, simplex/duplex
- Geared machine applications
- Terminal slowdown functions are virtual within the landing system
- Serial wiring for car and hall fixtures reduces traveler wires
- Onboard diagnostics and 200 events log
- Battery backup option
- Connects to MCE's remote monitoring/reporting system

Controllers

Motion 2000 Hydraulic Control



Application:

- Highly configurable for passenger and freight applications
- Up to 200 fpm, 16 floors, Front/Rear openings, simplex/duplex, groups to 6 cars
- Mechanical or Solid-State Starter
- Battery Rescue option
- Serial wiring for car and hall fixtures – reduces traveler wires
- Universal I/O (24 to 120 V AC/DC)
- Onboard diagnostics and event log
- Connects to MCE's remote monitoring/reporting system

ELEMENT Hydraulic Control



Application:

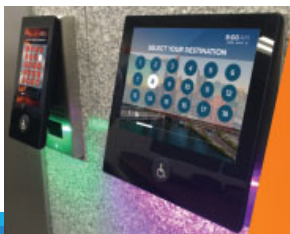
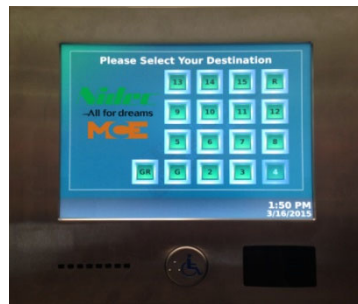
- Designed for low-end applications with limited options
- Up to 150 fpm, 16 floors, front openings, simplex/duplex
- Mechanical or Solid-State Starter
- Battery Rescue option
- Serial wiring for car and hall fixtures – reduces traveler wires
- Universal I/O (24 to 120 V AC/DC)
- Onboard diagnostics and event log
- Connects to MCE's remote monitoring/reporting system

Destination Based Dispatching (DBD)



Application:

- New paradigm for building elevator traffic management
- Uses complex algorithms to determine optimum dispatching based on passenger needs
- Improves elevator efficiency in high traffic buildings
- Groups passengers with like destinations to specific elevators
- Reduces the number of stops per elevator; faster times to destination
- Available in touch screen or keypad
- Meets Disability requirements for hearing and visually impaired
- Available in different languages



Destination Input Devices (DID)

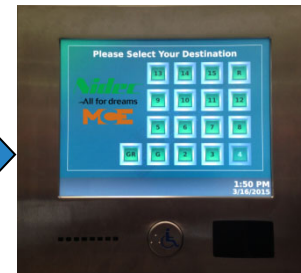
DBD Modernizations Strategy

Presenting DBD as an advanced Traffic and Security Management System

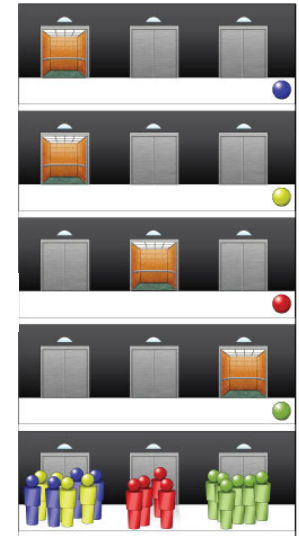
- Offering iControl and DBD system as a modernization product
- Developing own line of touch screen DIDs and sourcing from third parties
- Integrating elevator access with building security
- Provide traffic analysis as case study to promote benefits of DBD
- Currently compatible with 12 new security and elevator access systems



Traditional Hall Buttons



DID Touch-screen



Customer & Technical Services

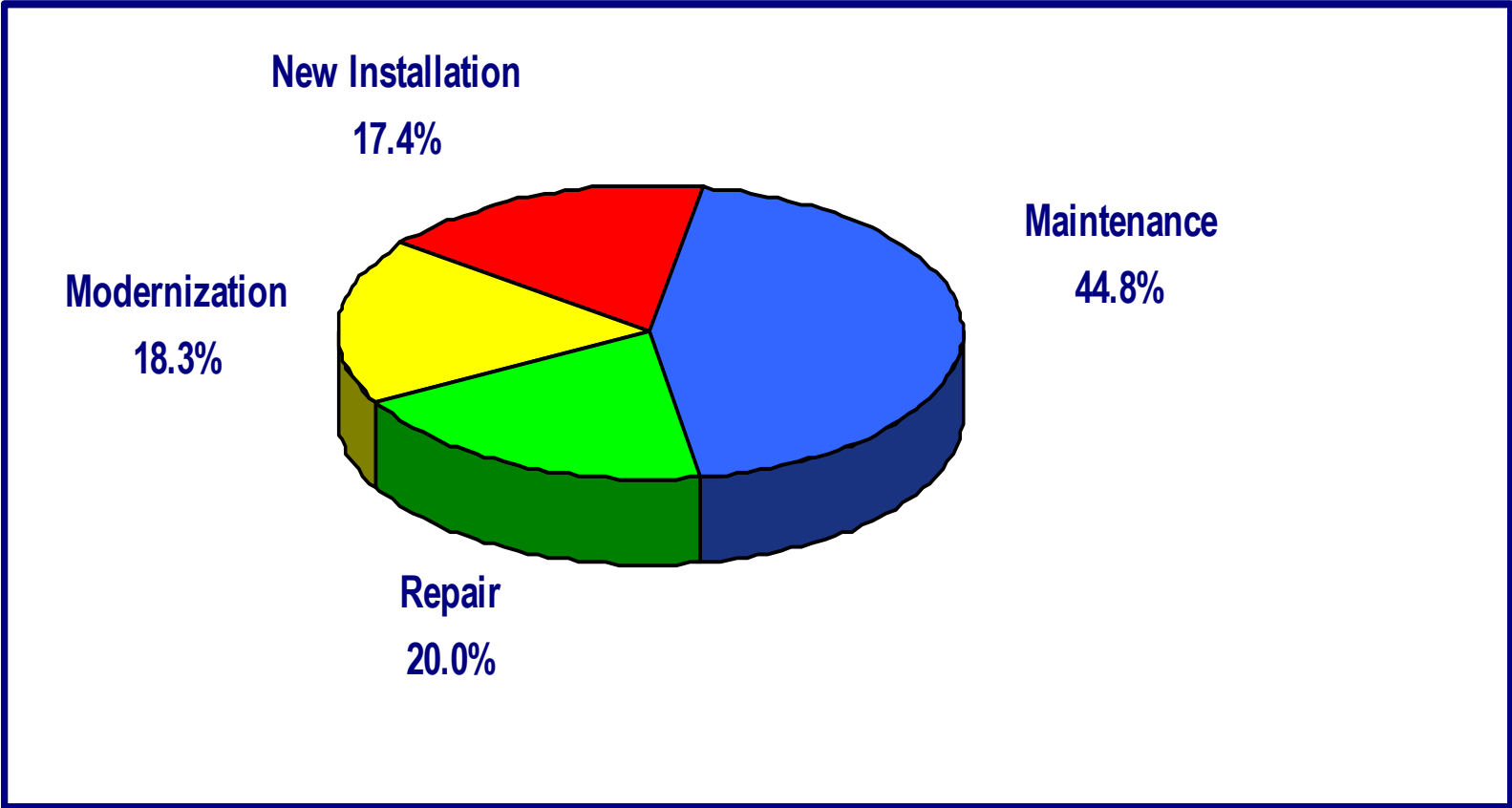
- ❖ MCE Toll Free number for part and Tech Support: 1-800-444-7442
- ❖ Tech Sup. Email: mcehelp@nidec-mce.com
- ❖ Parts Email: Parts@nidec-mce.com
- ❖ Mod Email: modifications@nidec-mce.com
- ❖ Monitored by group of people
- ❖ Numbers Tech: 18
- ❖ Number Admins: 14
- ❖ Send email for quick response or to be on Call back list
- ❖ All calls logged and archived in database



Overview of the Market

Overview of Market :: Elevator Industry Revenue

Elevator Industry Annual Revenue by %



Good News – ALL Control Vendors provide Non Proprietary products!

That's right, all Control Vendors (OEM's and Independent Suppliers) claim to be Non Proprietary.

Humm. This can be a volatile subject, strong and varying opinions abound. I should state before we continue that I am passionate on this subject and I am employed by a Company that helped to coin this term approximately 35 years ago.

Today, You get to help me with a homework assignment. I have been asked to refine MCE's Non Proprietary Premise because the term has been somewhat diminished "watered down" in the Industry - after all, if EVERYONE is Non Proprietary, there is no issue nor differentiation on this subject, right?



Over my 27 year tenure, I have provided a Non Proprietary Presentation dozens and dozens of times – however, the audience has always included Building Owners, Property Managers, Architects, Developers, Universities, Medical Centers, Housing Authorities, Transit Authorities etc. Not once have I provided this presentation to the Elevator Contracting Community, so this should be interesting.

Candidly, it is refreshing to be able to discuss this topic with Industry Professionals – this allows us to go much more in depth. After all, no one knows this subject matter better than Elevator Professionals.

Many times have I have conveyed to Decision Makers and Influencers that my primary goal is to educate not influence...in that the core benefit (the value proposition) of a truly non-proprietary control solution will likely (positively) influence them. Few people actively seek to purchase products that only one company can support.

Building Owners and Property Managers rarely (intentionally) invest in proprietary vertical transportation equipment, though certainly it does take place.

Is Non Proprietary more about the Commitment than the Component?

If this topic has not grabbed your attention yet, wait until we discuss Destination Dispatch and MRL's.



Webster's Definition of *proprietary*

1 : One that possesses, owns, or holds exclusive right to something specifically : proprietor sense 1

2 : Something that is used, produced, or marketed under exclusive legal right of the inventor or maker specifically : a drug (such as a patent medicine) that is protected by secrecy, patent, or copyright against free competition as to name, product, composition, or process of manufacture

3 : A business secretly owned by and run as a cover for an intelligence organization

Non-Proprietary Defined

Understanding Elevator Solutions and Non-Proprietary Controls (pros and cons)

Two (2) basic types of elevator systems and their life cycle

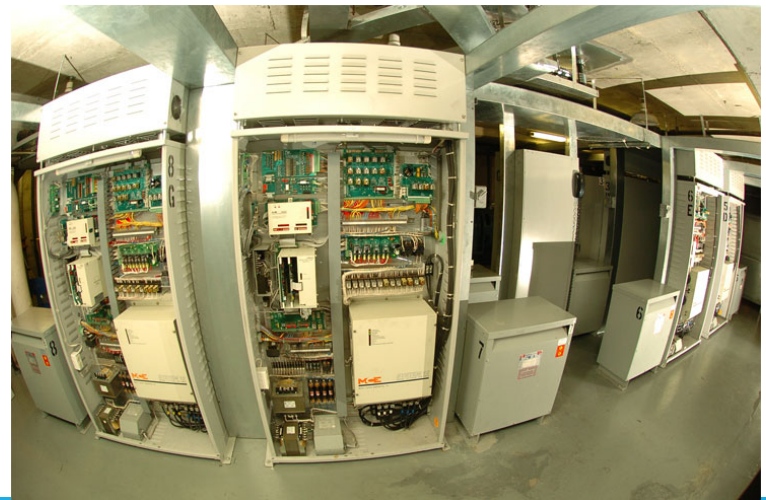
Your freedom of choice between non-proprietary and proprietary equipment in the elevator industry

Opportunities for competitive cost reduction options that are available to you by using non-proprietary control systems

Using Total Life Cycle Calculations to achieve the delicate balance of *“cost and quality”*

Consultant Definition

A “*Non-Proprietary*” controller product is one that is regularly sold by the manufacturer to other installers and one for which the manufacturer will provide on-going technical support to other contractors maintaining the product.



We do not believe that Non Proprietary is an ambiguous term – we believe that it can be defined. Once defined, it can be measured.

It is in the Building Owner's best interest to seek solutions that provide them with **the lowest total cost of ownership**, a determination which take into consideration the initial purchase price as well as the long term maintenance costs.

Building Owners rarely (intentionally) invest in proprietary vertical transportation equipment.

FALSEHOOD: Non Proprietary Systems are more expensive in the short term.

Precision Elevator and MCE's Core Values are aligned: MCE's philosophy of manufacturing open market, non-proprietary elevator control systems is congruent with Precision Elevator's business practices. Succinctly, this philosophy ensures that there is no restraint of the ability of the Building Owner and Contractor to service and maintain MCE elevator control systems. MCE provides lifetime support to the end user though Precision Elevator or your chosen service provider.

All Elevator Contractors will state that their products are non-proprietary. FALSE.

MCE Non-Proprietary Premise

- Universally Maintainable
- Universally Serviceable
- No Proprietary Service Tools Required

Non-Proprietary Premise:

- “Elevator service contractors should be selected and retained based on customer satisfaction, and not based on the equipment in your building”

Non-Proprietary Elevator Controls

MCE non-proprietary philosophy

- Universally maintainable
- Universally serviceable
- Serviceable and maintainable
- No proprietary service tools required

Regardless of the term used to describe them, non-proprietary elevator controls have had a significant impact on the elevator industry. They are at the core of MCE's product development philosophy and unique product differentiation.

MCE's success has prompted well-established proprietary manufacturers to compete in the non-proprietary product space — but, in most cases, these competitive products are not completely non-proprietary, and don't provide the complete freedom of choice offered by MCE.

MCE's non-proprietary vision dates to the early 1980s — and has served to counter the constraints of proprietary controller systems that have limited the choice of building owners.

"Non-proprietary" defined

It is the commitment, not the equipment that differentiates non-proprietary from proprietary. Contractors, manufacturers and elevator professionals suggest that all elevator control systems are basically proprietary in nature, by virtue of their design.

The degree of proprietary restraint can be measured by the ability of service companies other than the original control manufacturer to maintain the equipment — and the degree of proprietary restraint within distribution and support channels.

Freedom of choice is the reason most often mentioned by building owners when specifying non-proprietary elevator control equipment. The ability to select from among competitive maintenance providers, if necessary, ensures the sound financial future increasingly in demand by decision makers. The MCE Building Owner's Bill of Rights establishes performance standards against which all equipment can be measured for freedom from proprietary restraint.

Building Owner's Bill of Rights

1. Equipment shall be universally maintainable
2. Diagnostics shall be built in
3. A proprietary tool shall not be required for adjustment or maintenance
4. Parts shall be available for inventory... not just exchange
5. Technical training shall be available to all
6. Engineering and technical support shall be available to all
7. All manuals and drawings shall be provided
8. The control manufacturer shall provide direct support to the "end user" and their designated maintenance company

www.mceinc.com
800.444.7442
916.463.9200

MCE
Motion Control Engineering®
A Kinetek Company®

The leader in non-proprietary controllers, technical services and repair solutions for elevator modernization.


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Remember - You have a choice when selecting new elevator products.

10 Questions To Ask When Deciding On Elevator Controls.

These are specific questions that should be answered with a yes or no – no description required.

1. Can an alternate hoist machine manufacturer be utilized for replacement of the hoist machine without patented and/or non-standard sole-sourced design restrictions? **Yes / No**
 2. Are maintenance, adjustment and repair classes available to any elevator contractor for the elevator product being evaluated? **Yes / No**
 3. Are the suspension ropes industry standard and available through multiple sources? **Yes / No**
 4. Can the new proposed elevator be provided with various non-proprietary/serviceable and maintainable control systems? **Yes / No**
 5. Are all diagnostics allowing full access and system memories on-board and designed to remain a part of the elevator system regardless of the contracted elevator service company? **Yes / No**
 6. Are the fixtures and door operator capable of being interfaced discretely without need for serial communication from the original control system? **Yes / No**
- 

7. Can the traction elevator being considered be purchased by any elevator contractor? **Yes / No**
8. Yes / No Can any elevator maintenance provider obtain all replacement parts assemblies from the original elevator manufacturer distributor along with technical phone support? **Yes / No**
9. Can a complete replacement parts list, including every part associated with the elevator, be provided to any elevator service provider including the current pricing available to the open market? **Yes / No**
10. Will the elevator manufacturer provide complete replacements of electrical prints, circuit diagrams, mechanical prints, installation manual, maintenance manual and repair manuals for a low cost replacement fee? **Yes / No**

If any of these are answered with a “NO”, or further description is required, you are being offered proprietary controls.

Non-Proprietary vs. Proprietary

NON-PROPRIETARY <i><u>Customer Centric</u></i>	PROPRIETARY <i><u>Provider Centric</u></i>
<p>Many maintenance/repair options</p> <p><u>No</u> special service tool required</p> <p>Multiple <i>qualified</i> bidders for maintenance/repair</p> <p><u>Lowest</u> total cost of ownership</p>	<p>Limited maintenance/repair options</p> <p>Proprietary service tool required</p> <p>Very limited number of <i>qualified</i> bidders for maintenance/repair</p> <p><u>Highest</u> total cost of ownership</p>

Non-Proprietary Defined :: Core Benefits of Non-Proprietary Controllers

Core Benefits of Non-Proprietary Controllers – “Unrestricted Access to ALL”

Universally serviceable & maintainable

Diagnostics built in – NO SPECIAL TOOLS

Manuals/prints/software readily available to ALL

Parts for replacement & inventory available to ALL

Factory & field training available to ALL

Technical support available to ALL

Field service support available to ALL

Long Term - Lowest total cost of ownership

Moment of Truth *“When and/or how will you know?”*



◆ Routine Challenges

- ✓ Change service provider – Routine bid process
- ✓ Change service provider – Unhappy with quality of service
- ✓ Change service provider - Warranty terms and conditions
- ✓ Proprietary PCB requires replacement
- ✓ Control modification requires new software
- ✓ Security enhancements require new software
- ✓ Special diagnostic tool is required to test/adjust control equipment
- ✓ Prints required to maintain your equipment
- ✓ Technical manuals required to maintain/adjust your equipment
- ✓ Technical support required to restore your elevator to service
- ✓ Technical training required for your contractor

Crisis

- ✓ Your main tenant is trapped in the elevator
- ✓ Due diligence inspection in progress - Critical elevators are down
- ✓ Tenants are continually trapped in the elevators – **“Law suit”**
- ✓ Handicap visitor/employee cannot get to tenant – Elevator down - – **“ADA Law suit”**
- ✓ Timeline to complete Code required update is approaching
- ✓ Natural disaster destroys some of your elevator control equipment
- ✓ Waterline breaks and your elevator control equipment is damaged
- ✓ Work Stoppage ... Lockout – 2005 in NYC
- ✓ IUEC Contract expires in 2007

Defining Moment *“My challenge to you”*



When you return to your work place ... make some calls

- ✓ Request a set of prints – *Price of Non-proprietary vs. OEM??*
- ✓ Request clarification – What will occur if you change contractors in the middle of your warranty – *Non-proprietary will stay with the equipment*
- ✓ Request high level technical support to solve a problem
- ✓ Request an engineer for on-site assistance to solve a problem
- ✓ Request factory technical training for your people or contractor
- ✓ Request on-site technical training for your people or contractor
- ✓ Request all software updates previously released for your equipment
- ✓ Request a diagnostic tool w/same level access as a field adjuster

Elevator Total Lifecycle Costs

Elements of Total Lifecycle Costs

New Installation

✓ (In newly constructed building)

Modernization

Ongoing Maintenance

Ongoing Repairs/Updates/Modifications

Our focus for today's presentation

✓ Modernization, service and repair



Elements of Total Lifecycle Costs

Initial Modernization

- ✓ Capital investment
 - **Controller only +/- 15-20% of total project cost**

Ongoing Maintenance

- ✓ Ongoing costs incurred after initial modernization
 - May ultimately surpass the cost of the initial investment

Ongoing Repair/Updates/Modifications

- ✓ In addition to ongoing maintenance expenses, you will also spend about 40% for ongoing repairs (beyond scope of maintenance contract including vandalism, enhancements, modifications and complying with code requirements)
 - Rule of thumb in contracting: For every \$100,000 of maintenance revenue will generate +/- \$40,000 in repair revenue

➡ ***Which leads to one of biggest advantages of non-proprietary controls***



Freedom to Choose Service Provider

Potential for cost savings and more favorable value proposition

- ✓ Typically or in most instances ... OEM service maintenance pricing will be more.
- ✓ Using non-proprietary equipment that anyone can maintain, your potential average cost savings for maintenance service alone can be +/- **15-30%** over the life cycle of the product.
- ✓ Standardization with non-proprietary equipment will result in increased labor efficiency and less inventory cost.
- ✓ Standardization with non-proprietary equipment will position you to have the option to provide in-house preventative maintenance.

Elements of Total Lifecycle Costs

Ongoing service and maintenance of elevators can ultimately surpass the cost of the installation and/or modernization.

Operations/maintenance personnel may have limited involvement with the selection process.

When the project is complete ... you will then learn if you have a piece of equipment that only one company in town can take care of!!

Elements of Total Lifecycle Costs – Non-Proprietary Advantages

Replacement Parts

- ✓ Unlimited access and can purchase direct

Technical Information/Drawings

- ✓ Unlimited access
- ✓ Non-Proprietary - \$50 vs. Others - \$150 – \$300 **per page**

Diagnostic Tools

- Non-Proprietary - **None** required
- Others may restrict access to required levels

Warranty

- ✓ Non-Proprietary – The warranty typically stays with product
- ✓ Others – If the product is not maintained by the OEM, warranty may be voided

Conclusion

Non-proprietary vs. Proprietary

- ✓ *Will maximize your clients long term RIO*
- ✓ *Will reduce the total life cycle cost*
- ✓ *Will always preserve your clients freedom of choice*

Standardization will improve quality and lower cost

Use Total Life Cycle Calculations to get what you want

No plan ... is a plan to fail

- ✓ *Long term modernization plan ... preserve your legacy*

➔ **You and your clients deserve to have the freedom of choice!**

Defining Moment
“My challenge to you”



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