

# Big Opportunities for Small Formats

Convenience stores and adaptive solutions



# Typical Convenience Store

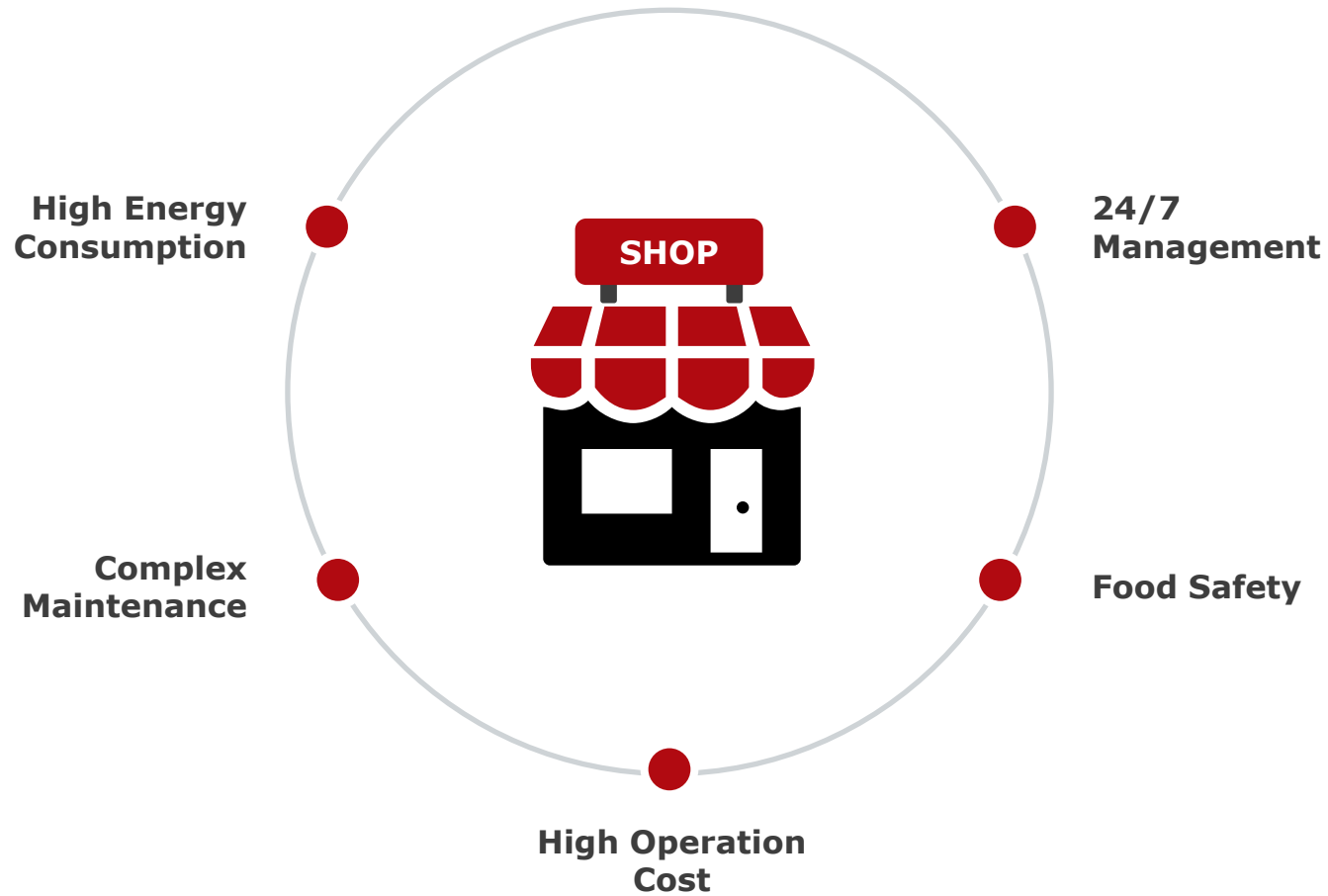


## Talking convenience stores

- Supermarket complexity, but in smaller scale
- Type: Stand alone or part of e.g. gas station
- Offer: increased availability service
- Price: Higher than e.g. Supermarkets
- Quickly growing market globally



# Facing the Challenges



# Let Danfoss Help You Unleash the Opportunities



Refrigeration



Heating,  
Ventilation,  
A/C



Monitoring &  
Management



Lighting



Miscellaneous  
Control



# Let Danfoss Help You Unleash the Opportunities



## Refrigeration

- Precise temperature control
- Energy efficient
- 24/7 monitoring
- Remote access



## Monitoring & Management

- Benchmarking across stores
- Monitoring all assets
- 24/7/365
- Prioritized Improvements



## Lighting

- Automatic control of indoor and outdoor lighting
- By period or by season
- Motion or light sensor



## Heating, Ventilation, A/C

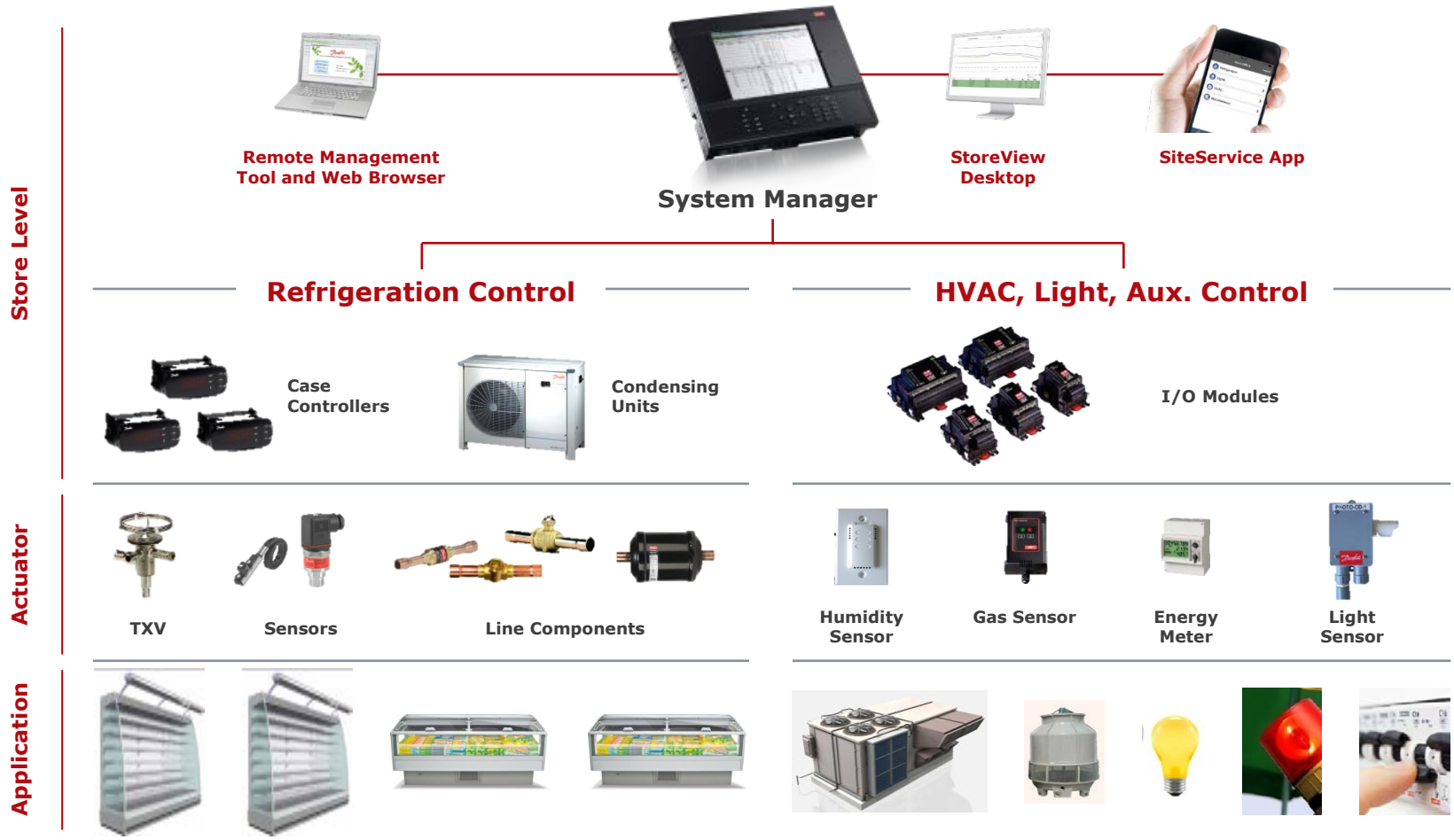
- Comfort
- Energy savings
- Packaged Condensing Units for easy installation



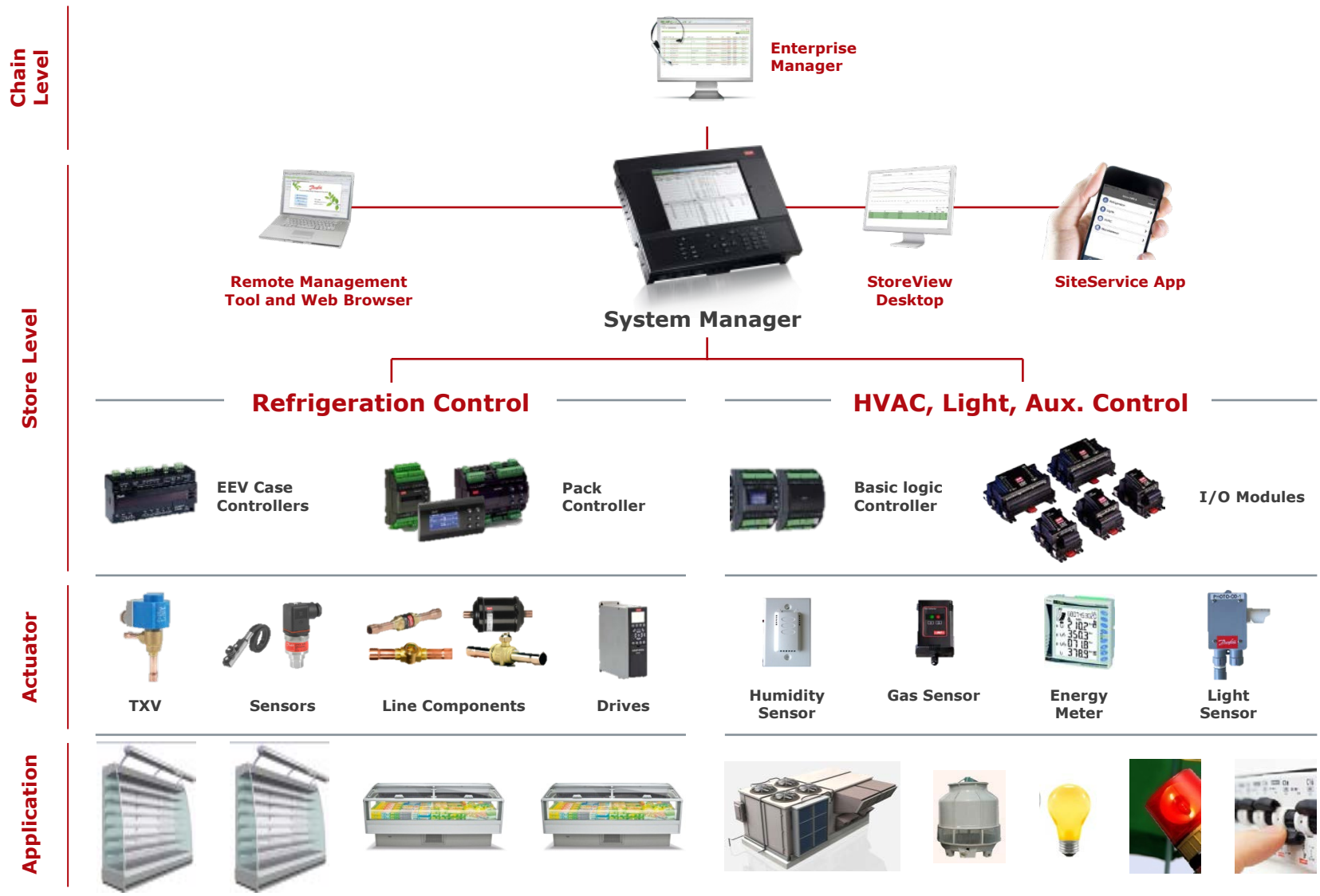
## Miscellaneous Control

- Scheduled on/off
- Improve safety and energy efficiency
- Remote monitoring and control

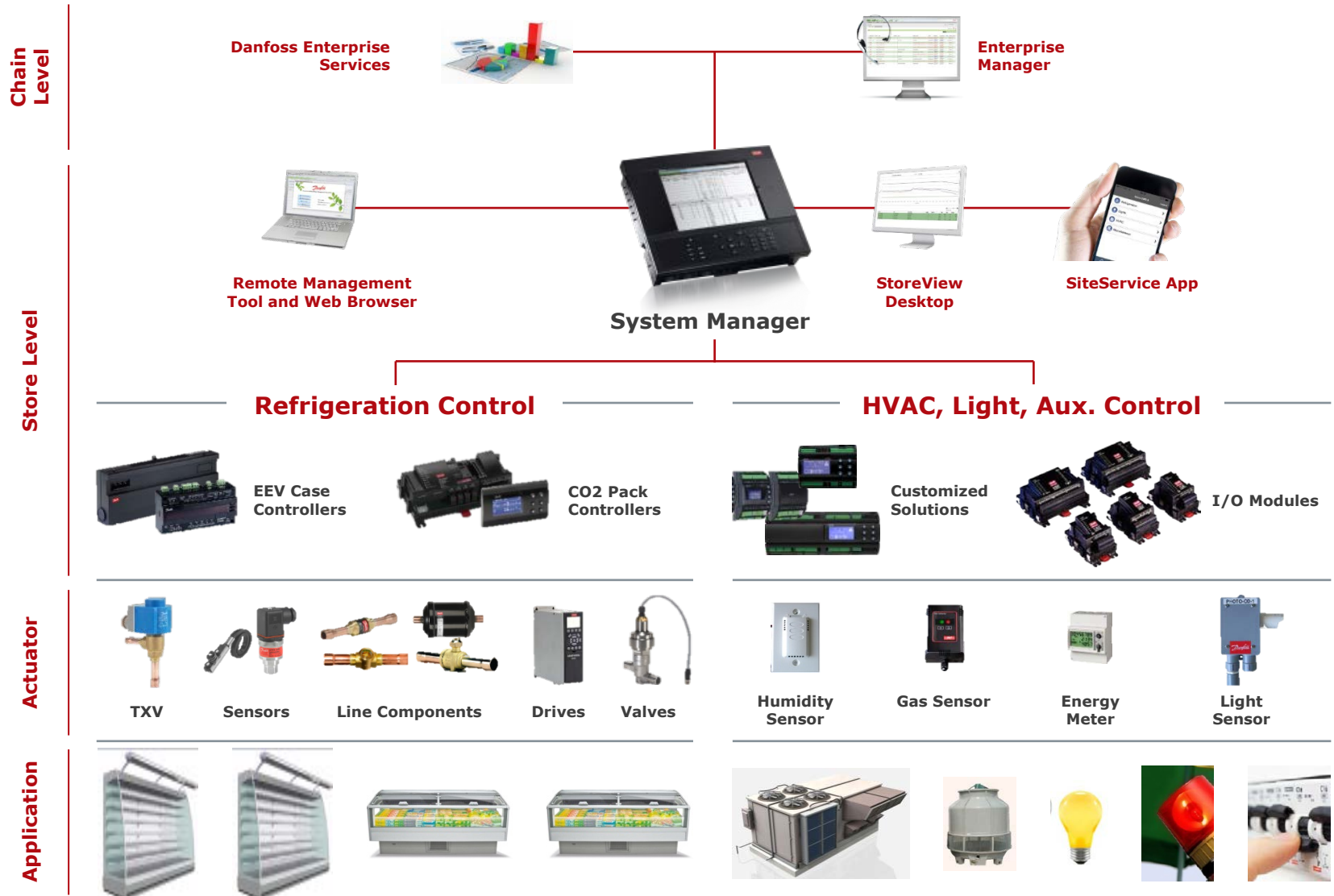
# System Configuration – “First Cost”



# System Configuration – Intermediate



# System Configuration – “Best TCO”





# Case Study: Centra, Ireland

## C-Store Supermarket Cuts 11% off Energy Bill



**Centra supermarket, Ireland**

The Centra supermarket in Rathdangan in Ireland is a typical small store serving the local community. A review of the refrigeration system led to the installation of the Danfoss ADAP-KOOL<sup>8</sup> combined with the Small Store System Manager. The energy savings amount to 11 % every year.

[Read the full story](#)

# Case Study: French Convenience Store Chain



**Simple solution with a pay-back time of less than one year**

[Read the full story](#)

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## **BEFORE** Smart Store installation

- Store lighting: by switch
- All lighting is turned on from the arrival of staff and for the whole day, even during the midday close
- No light zoning
- Continuous lighting of parking lot during night
- Cooling not optimized: despite the presence of curtains on the cabinets, the set points were not lowered at night
- The floating HP was not activated and the pack was oversized in winter and mid-season

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## **AFTER** Smart Store installation

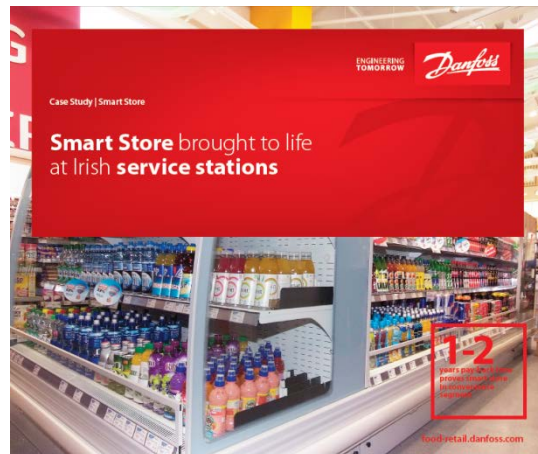
- Variable speed installed on existing compressor and condenser, enabling floating HP setting and night set-point modification
  - Existing controller replaced by SC 255 for integrated control of refrigeration, light and HVAC
  - Light zoning introduced inside store and on parking lot
  - Reversible heat pumps runs based on scheduled hours and thresholds (high in winter and low in summer) linked to the outdoor temperature
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# Case Study: Ukrainian Convenience Store Achieves 34% Savings



[Read the full story](#)

# Case Study: Maxol, Ireland



With 230 service stations around the country, Maxol Group is the leading family-owned oil company in Ireland. Beginning in 2014, Maxol stations underwent a transformation that placed increased focus on the customer experience, offering high-end snack products and convenience shopping to people on-the-go. During this transformation, Maxol wanted to upgrade refrigeration, lighting and HVAC to support store ambience, ensure food safety and save on energy bills.

**The result is the first Irish smart convenience store with the following benefits:**

- High food quality, comfortable indoor environment, improved energy efficiency
- Full-store control of refrigeration, lighting and HVAC via one, user-friendly dashboard
- All food storage assets controlled via one front-end to ensure HACCP compliance
- Easy set-up and commissioning for all assets
- Easy training of onsite and technical staff

#### Smart convenience store enhances the customer experience

In cooperation with the contractors Cross Group and Danfoss, Maxol has pioneered the first smart convenience store in Mulfuddart on the outskirts of Dublin. The service station offers its customers a branded coffee shop, snacks, salads and convenience shopping – and now all these different franchises use a single, integrated control system that enables safe and easy operation.

"The project allowed us to engineer a total store solution that meets Maxol's requirements for customer experience, food safety, HACCP compliance and energy efficiency. The solution has run for 4 months and lives up to the expectations. So much so that Maxol is now asking for new features – for instance, meeting of the individual franchisees on the premises. We expect the Mulfuddart store to serve as an inspiration for similar Maxol service stations in the coming years," says Paul Keegan, Projects Director at Cross Group.



In 2016, the Maxol project won an RII Energy & Environment award for companies who have showed a track record of reducing environmental impact and achieving significant energy savings through focused application of system technologies.

#### Full store control via one dashboard

A user-friendly dashboard that monitors refrigeration, HVAC, indoor and outdoor lighting, energy and alarms makes it easy for store staff to control all building services. The dashboard is intuitive and easy to learn. Integrated refrigeration control provides automatic HACCP reporting for all equipment, and the set-up and commissioning of all assets is done with built-in wizards, making additions to building control systems fast and easy to implement.

"The Maxol project has proven that our Smart Store concept is not only suited for bigger supermarkets and hypermarkets, but that it is easily adaptable to convenience stores with an expected pay-back time of only 1-2 years thanks to savings on energy bills and other operation and maintenance costs," says Shane Fleming, Sales Manager.

#### Facts about the Maxol Smart Convenience Store solution

- Integrated control of all refrigeration equipment including pack, cases, integral cases and cold room
- Easy monitoring of refrigeration, heating and air conditioning, lighting zones inside and outside store, energy consumption and alarms through one simple dashboard
- Power metering and energy management system
- Monitoring of temperature, air quality and humidity
- Control of outside signage and car park lighting controlled by photocells and schedules
- Wireless Temperature Monitoring
- Gas leak detection
- Alarm management

#### Facts about Cross Group

Cross Group is a leading supplier of turnkey solutions for food retail, comprising refrigeration, HVAC, lighting and energy management. With a focus on greener technologies, Cross Group is committed to delivering solutions that are eco-friendly, energy efficient and that give value for money. With more than 180 cooling experts, Cross Group operates in Ireland, across the UK, and with increasing activities overseas.

#### Facts about Danfoss Smart Store

As a market leader with more than 50,000 food retail installations worldwide, Danfoss leads the development of integrated Smart Store control solutions. The Smart Store solution is currently running in more than 5,000 stores worldwide and the proven energy savings are up to 50 % per store.

The Smart Store solution enhances food safety and brings down energy bills through integrated and smart control of refrigeration, HVAC, lighting and other applications, connecting and optimizing stores from case to cloud.

#### Facts about Maxol Group

The Maxol Group is a leading Irish, family-owned business. Today, with its network of 230 service stations, Maxol is one of the strongest service station networks in Ireland. Of its 230 stations, 130 are owned by private individuals who have selected Maxol as their brand and fuel supplier. Maxol itself owns the remaining 100 stations, licensing the premises to local businesspeople with experience in retail and connections to the local community.



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DKCP/PA/11/12

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# Right From the Start

## Total Cost of Ownership



### Acquisition

- One System Manager for all applications
- Scalable system based on needs and economy
- One stop shop
- Basic to advanced



### Operation

- Energy Consumption identified per asset or section
- Focus on Energy Reduction and Optimum use
- Reduction on Maintenance Cost
- Close control & monitoring reduces food loss (insurance)
- Identify Bad Performers (Temp., Energy, etc. )



### Managing and Planning

- Clear & Precise knowledge supporting proper Maintenance Management programme.
- System application knowledge
- Global suppliers for support service of the system.
- Product and system Training program available



**ENGINEERING  
TOMORROW**