Largo Consumo



DATA DRIVEN SHOPPING

IN-STORE CONNECTIVITY | LIGHTING TECHNOLOGY
ENERGY MANAGEMENT | REFRIGERATION
COLD TECHNOLOGIES

cisco iGuzzini Schneider Electric arneg WORLD arneg eliwell by Schneider Electric



THE SMART STORE: BETWEEN DIGITAL AND ENERGY SOLUTIONS

AN INTEGRATED MIX OF ADVANCED SOLUTIONS MAKES IT POSSIBLE TO RISE TO THE CHALLENGES OF COMPETITION THAT HINGES INCREASINGLY ON DIGITAL CAPABILITIES AND CONTROLLING ENERGY CONSUMPTION.

Smart Building Thanks to Maximum Technological Flexibility

Italy's first Digital Energy Report, drafted by the Energy & Strategy Group of the Polytechnic **University of Milan**'s School of Management, focused its attention on digital energy - the possibility of using digital technologies to control energy consumption and optimize the use of collected data. The report also introduces the concept of smart building, the combination of energy efficiency and the flow of data functional to the system's optimization. **Federico Frattini**, Professor of Strategic Management & Innovation at the Polytechnic University of Milan's School of Management, explains that in a smart building a variety types of architecture can be adopted, from the simplest ones with stand-alone systems and individual monitoring of values and consumption, to more innovative and complex varieties, in which advanced control systems integrate the information collected from various systems and dictate automatic regulation and energy exchange. In the case of the large-scale retail trade, it's been observed that the advantages are more significant than in buildings destined for other purposes: «There's great ferment among large-scale retailers, admits Frattini, the increasing importance attributed to the customer experience pushes retailers to innovate and this, along with other considerations, represents a further push toward digital energy, many of whose applications we'll see in the coming years».

«Increasing importance attributed to the customer experience pushes retailers to innovate»



Federico Frattini,
Milan Polytechnic University

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The Great Challenges: the Centrality of the Customer and Cross-Channel Retailing

For retailers today, data are a crucial resource to acquire, invest in, and utilize in order to create value. **Giuliano Noci**, Professor of Strategy & Marketing at the **Polytechnic University of Milan**'s School of Management, confirms this: «At the foundation of this ongoing evolution are data and knowledge of people. Until recently retailers based their sales on their promotional push because they didn't know their customers, but consumers aren't always looking for a discount: the offer of products and services has to be personalized».

One of the issues to emerge recently is the misalignment between the information about customers available online and offline, to the overwhelming benefit of the former, with the ability to track consumers when they do searches and find information. New players like **Amazon** are "natively" structured with a customer-centric and a cross-commodity perspective, while traditional retailers have focused until now on products and specific categories of merchandise. The challenge that needs to be overcome is to revolutionize processes and culture to put the focus firmly on the customer.

«The offer of products and services has to be personalized»



Giuliano Noci
Milan Polytechnic University

Designing Retail: sustainability and design move forward together

«In Italy the topic of sustainability and energy efficiency is strongly felt», argues architect **Massimo Iosa Ghini**, who for some time now, in addition to architectural planning, has been designing retail chains throughout the world, such as the **Ferrari Stores** in Europe, the U.S., and Asia. Equally important is the need to make the physical spaces increasingly attractive, with an extreme attention to design.

For those dealing with the construction of new buildings, sustainability is at the top of the list of priorities. But if retailers move into preexisting buildings and want to "regenerate" them, they can run into building limitations, especially when the building has historical value and the will to achieve energy efficiency has to compromise with the need to safeguard the cultural patrimony. Today various solutions are available, from insulating facings to solar panels and photovoltaic systems: where these aren't feasible, compromises must be found.

«The topic of sustainability and energy efficiency is strongly felt»



Massimo Iosa Ghini,
Architect

A New, Experiential Model for Physical Space

«The physical store represents the opportunity to guarantee consumers a hedonistic, relational sensory experience, everything that can't be offered in an e-commerce context. The challenge, however, consists in making that experience qualitatively superior so that visiting the retail outlet desirable. Engagement, entertainment and sensory stimulation must fuse with the design of the physical space and the presentation of products and services." So says **Nadia Olivero**, lecturer in the Psychology of Consumption at Milan's **Bicocca University** and director of consulting firm **KNOWHY**.

«Companies that manage most effectively to articulate their physical presence in experiential terms will succeed in guaranteeing their own survival in physical retail. Models based prevalently on assortment and price, however, will struggle to win the battle with large-scale online retailers».

«Engagement, entertainment and sensory stimulation must fuse»



Nadia Olivero,
Director of KNOWHY



SYNCHRONIZING THE ONLINE AND OFFLINE VISION OF THE CUSTOMER

THANKS TO CISCO, WI-FI BECOMES A POWERFUL TOOL FOR ANALYZING CUSTOMER BEHAVIOR DURING THE PURCHASING EXPERIENCE.

The "digital revolution" has highlighted the importance of having thorough customer knowledge and the advantage of the digital with respect to the physical world: for if stores have, until now, assessed their results based on sales, the online world disposes of greater data with regards to visits to websites and their duration, the information requested, shopping carts left unpurchased, and customer feedback. Today, technology permits the physical world as well to obtain analogous sources of data, and new applications transform this data into information for better managing relationships with customers. Mobile devices are increasingly central: customers use their smartphones to look for information on the Internet, compare, purchase, and to pay. Free Wi-Fi is increasingly valued by customers, but it's also an opportunity for retailers to track connected customers when they enter the store, identify them if they come back, and send them messages. Cisco, a protagonist in the evolution of networking technologies for over 30 years, offers cloud-managed networking and on-premise solutions allowing companies to extend free Wi-Fi to their customers and to obtain tools for behavioral analysis, maps to track visitors' routes, and many other types of information, based on a networking infrastructure that's safe and easy to manage. Cisco makes available various API technologies capable of communicating with solutions offered by other partners, creating an innovative retail ecosystem with advanced functions of analytics, CRM integration, business intelligence, and advanced marketing.

91%

OF TOP ITALIAN RETAILERS INVESTED IN FRONT- AND BACK-END DIGITAL INNOVATION IN 2017

84%

OF TOP ITALIAN RETAILERS WOULD LIKE TO INVEST IN FRONT-END DIGITAL INNOVATION IN THE FUTURE

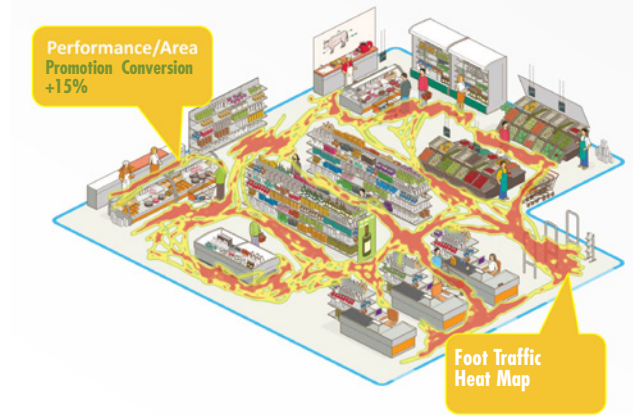
Source: Polytechnic University of Milan

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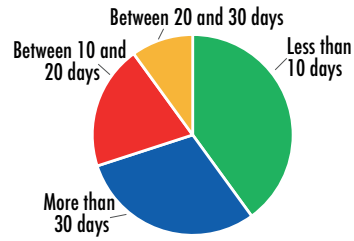
THE CLOUD FOR CUSTOMER ANALYSIS

Xensify is an innovative start-up born in 2014 with the goal of accelerating the process of digitalization in the physical retail sector, particularly regarding the interactions that develop between retailers and consumers.
The idea is to bring use digital world types of thinking into the physical world to obtain data which is useful, on the one hand, for renewing marketing strategies to make them more effective and in step with the times, and, on the other, for improving the management of in-store personnel, optimizing the organization of their work in terms of staff numbers and shifts.
Xensify offers a cloud-based platform of customer analysis that's capable of acquiring and processing data collected in the field from various sources, thus giving company management information that's clear, always up-to-date, and accessible via the dashboard.
The Customer Analytics module supports marketing through the monitoring of a retail outlet's operational strategies, measuring indicators such as the attractiveness of the sign, the use of space, the customer conversion rates, sales staff performance, and the path taken by visitors inside the store.
Also available is a module of Digital Signage for the distribution of digital informative content within the retail outlet, which can thus be centrally managed.

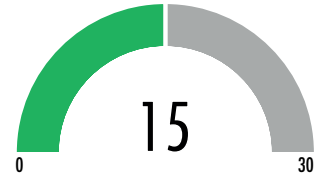
Digitalization of Retail: On-Site Consumer Analysis



Clusters of Returning Visitors over Time



Average Return Visitors per Area



A look at what the Xensify system's analysis can highlight, applied to the case of a home improvement store (Bricocenter) and concerning the trend of returning visitors by cluster in relation to the time elapsed since the last visit, on average and by area

Bricocenter: facilitating Data Acquisition and Processing

In recent years **Bricocenter** has transformed its business model with a push toward "proximity commerce"; **Enzo Venneri**, COO of **Xensify**, explains the technologies that, thanks to Xensify and Cisco, are putting the company in a position to better comprehend the potential and demands of the new market and improve the performance of its retail outlets, product ranges and services. Starting with the data obtained by the WIFI networking platform Cisco CMX, Xensify CA analyzes and correlates the number of customers who enter the store, the time of their visit overall and by department, and the frequency of their visits. These indicators, together with others acquired via third-party devices such as the people counters at the entrance, make it possible to study overall customer behavior and correctly assess the store's potential.
By later integrating these data with the number of transactions made and receipts, it's possible to gain a complete view of the retail outlet's operations and the possibilities of increasing its efficiency. Moreover, the company can make organizational choices based on the flow of clientele and the duration of their store visits, to guarantee desired levels of service and sales. The analysis carried out on the pilot store, for example, highlighted that in three months, from roughly 425,000 potential visitors, 40% of them turned into actual visitors, and 35% of those received help with their purchase from store personnel. The solution created by Xensify and Cisco has produced excellent results in the first pilot store and its extension to other retail points is already underway. «Today many technologies are available: some are utilized actively and directly and thus produce immediately perceptible benefits, while others are less evident. Among the latter is Cisco CMX, which facilitates the acquisition and processing of the data on which the Xensify CA platform is based," Venneri concludes. In addition, as underlined by **Tina Tempesta**, Bricocenter's Director of Administration, Finance and IT, "the collaboration with Xensify and Cisco has allowed us to improve the test store's performance thanks to targeted and timely interventions. We're continuing to spread the use of these technologies to 5 other stores in 2018 for the purpose of improving our customers' purchasing experience with stores that are attractive and useable in all their spaces».

«The collaboration with Xensify and Cisco has allowed us to improve the test store's performance»



Tina Tempesta, Bricocenter's Director of Administration, Finance and IT

INTELLIGENT WI-FI

Cloud4WI, an Italian start-up born in 2014, offers Volare, a location analytics and marketing platform designed to align the offline and online experience.
Elena Briola, VP of Marketing, explains that Cloud4WI is a start-up with solid roots, linked to the **University of Pisa** and with offices in Pisa and San Francisco.
With Volare retailers can offer their customers an intelligent Wi-Fi connection and, thanks to integration with Cisco Meraki, collect information that can be used to highlight trends regarding visitor behavior as well as being able to send customers personalized messages via multiple channels.
Wi-Fi thus becomes a key element from the standpoint of digital transformation.
Volare currently connects more than 65 million mobile users in roughly 15,000 locations in over 80 countries.

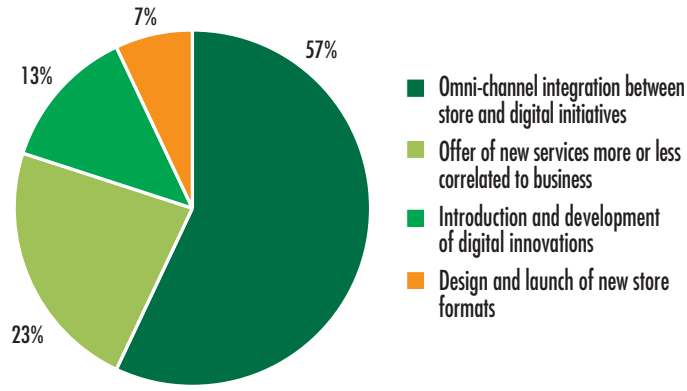
47%

OF ITALIAN CONSUMERS THINK IT'S IMPORTANT TO HAVE WI-FI IN STORES
Source: PwC

48%

OF ITALIANS USE SOCIAL MEDIA DURING THE PURCHASING EXPERIENCE TO READ REVIEWS, COMMENTS AND FEEDBACK

The Building Sites of Innovation for the Retail Outlet of the Future according to the Top Italian Retailers (in %)



Source: Polytechnic University of Milan

FS Italiane Group: the Result of a Great Team Effort

Thanks to the collaboration between **Cisco**, **Almaviva** and **Cloud4Wi**, **FS Italiane Group** (the Italian state train company) was able to create one of the best digital innovation projects in Italy: Wi-Life Station, a project which took the prize in the "Internet of Things for Retail" category at the Digital360Awards. The heart of Wi-Life Station is a virtual portal created to offer visitors present in train stations not only a Wi-Fi connection for their mobile devices, but also tourist-type information useful for planning their stay and activities in the city, monitors with train arrival and departure schedules and other services for those departing, such as the weather forecast and current weather conditions in the city, modes of accessing local public transport, and more. To access the services provided by the Wi-Life Station platform, all you have to do is sign up at WIFIstation.it or search for the Wi-Fi network present at the station, with the added possibility of logging in through social media.
Elena Briola, Cloud4Wi's VP of Marketing, explains that this type of solution allows to understand and engage consumers as well as possible in the station, following their movement and stops through their respective mobile devices. Since the platform is open, it also allows other stakeholders to interact with the portal's users and offer additional services. Almaviva, a company active in the ITS (Intelligent Transportation System) sector and already present as a specialized operator in train stations, facilitated the practical realization and launch of the project in its role as system integrator.
«Wi-Life Station is the result of a great team effort with Almaviva, Cloud4Wi and Cisco" – declares **Maurizio Levi**, CIO and ICT Director for **Rete Ferroviaria Italiana** (the Italian Rail Network), the project's creator and promotor – "I'm proud to see that the dream of a smart station in a smart city is a reality in 14 stations, where digital travelers can find services in line with their expectations».

«This type of solution makes it possible to track customer behavior»



Elena Briola, Cloud4Wi's VP of Marketing

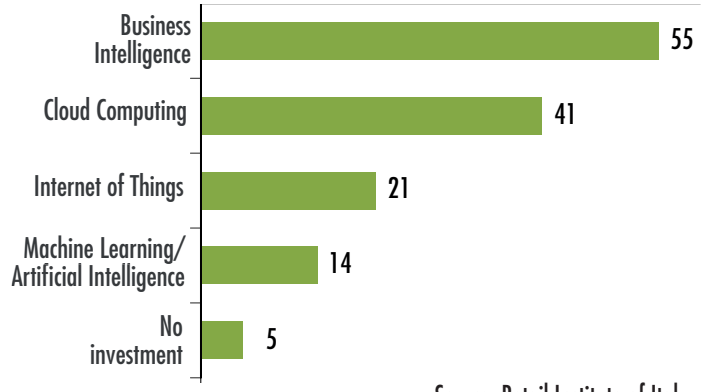
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A BETTER CUSTOMER EXPERIENCE

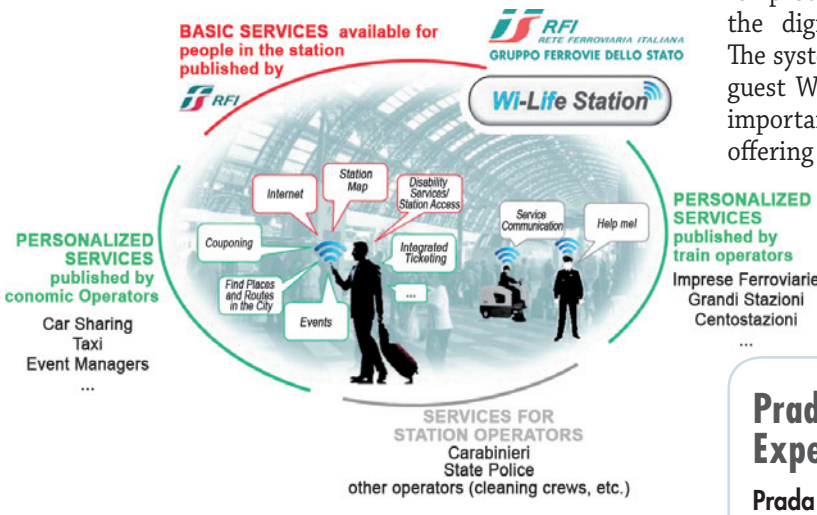
Cisco Meraki is a cloud-managed networking solution capable of improving in-store customer experience, and which presents lower management costs than traditional networking solutions. Cloud-based management is simple and intuitive and can be installed in minutes with no need for training or assistance from dedicated personnel. Thanks to this tool, retailers are immediately able to offer visitors a free Wi-Fi network and customers, from the moment they log in, can be identified and followed in their movements, with the maximum respect for privacy. Cisco Meraki makes it possible to know how many connected customers are present in the store, tracking not only their number but also their characteristics and the path they take.

The system provides data and an API to allow integration with applications of various sorts, beginning with CRM systems and including solutions for guiding customers, orienting them in their store visit or sending them messages and special promotions on their respective smartphones. The data can also be useful for carrying out marketing analyses on acquired and potential customers and on their in-store behavior. The PCI DSS Level 1-compliant cloud networking platform is capable of guaranteeing the entire networking configuration. The Meraki Air Marshal Wireless Intrusion Prevention System (WIPS) detects and neutralizes any threat within the Wi-Fi environment, thus allowing companies to create a secure network that also respects current norms for protection and safety on the digital payment front. The system constitutes a safe guest Wi-Fi, representing an important public service by offering all customers secure access to connect through personalized pages with the retailer's brand. Cloud management architecture guarantees complete, centralized control of the entire network that requires no installation of other on-site hardware, is equipped with automatic monitoring and notification systems, and, at the same time, ensures maximum scalability.

Intended IT Investments of Italian Retailers for 2018 (in %)



Source: Retail Institute of Italy



22%

OF ITALIAN RETAILERS ARE "CLOUD BORN", MEANING THEY'VE JUST BEGUN THE DIGITAL TRANSFORMATION PROCESS

Source: Retail Institute of Italy

8%

INCIDENCE OF RETAILERS (LARGE- AND SMALL-SCALE) ON THE TOTAL AMOUNT SPENT ON PUBLIC CLOUD STORAGE

Source: Polytechnic University of Milan

Prada: how to Personalize the Customer Experience

Prada by installing **Cisco Meraki** and **Cloud4Wi**'s Volare platform, has been able to offer customers free Wi-Fi in all its stores and follow them through their mobile devices. Thanks to the Volare Presence and Location Analytics applications, management can track customer movement, time spent per area, frequency of visits and other information, thanks to integration with social media. There will be a move from a unified worldwide database to integration with CRM to connect digital identities to visits and, from here, arrive at targeted marketing activities, both via email and messages to smartphones and by sending customer profiles directly to sales associates.



LIGHT-INSPIRED CONSUMPTION

Arese's "Il Centro": one of the entrances

THANKS TO ITS SOLUTIONS, IGUZZINI USES LIGHT TO IMPROVE THE PURCHASING EXPERIENCE AND THE CONSUMER-STORE RELATIONSHIP.

In the scope of retail sales strategies, light is increasingly viewed as an opportunity to attract and inspire customers, offer them an enjoyable brand experience, increase the time of their visit and, thus, boost sales volume. The perception and coloring of light and the resulting sense of well-being have a decisive impact on customer behavior, so planning choices and product selection are fundamental aspects to keep in mind in the creation of spaces. In this context, offering solutions that respond to the needs of the commercial sector is what makes iGuzzini unique. The lighting company headquartered in Recanati, with a 2016 turnover of €231.5 million and a growth of 26% in the last 4 years, collaborates in projects to make lighting a protagonist in influencing consumers' emotions, perceptions and experience. iGuzzini looks above all to miniaturization to offer designers and retailers the possibility to customize a luminous stage, with particular attention to energy efficiency.

THE EVOLUTION OF LEDS

The planning of a lighting system cannot overlook goals for reducing energy consumption and environmental impact. LED technology meets these needs perfectly, as well as having a longer life and greater flexibility and dynamism.
LEDs, in fact, are characterized by the easy regulation of the light they emit and the possibility of multiple variations in color composition.
In the retail world, this makes it possible to create lighting scenarios to guide customers along a sensory and emotional path and redefine spatial layout.
Alongside traditional, sub-

4,2 bln

2016 TURNOVER IN THE ITALIAN LIGHTING SECTOR
Source: ANIE

2,4 bln

VALUE OF ITALIAN PRODUCTION OF LIGHTING FIXTURES
Source: CSIL

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stantially static illumination systems characterized by a distribution of light that's unidirectional and constant over time, today it's possible to integrate evolved technologies and intelligent systems capable of getting the most out of their potential. Thanks to the digitalization process underway we're witnessing the LED revolution 2.0, which is opening up new development scenarios and placing lighting in the center of the Internet of Things (IoT) and man in the center of light.

A "HIDDEN" SOURCE

The retail sector represents an important part of iGuzzini's turnover. Directed spe-



Eataly Smeraldo: the fruit and vegetable department

Eataly: «We've Chosen Light for the Greatest Visual Comfort»

In the food sector **iGuzzini** has collaborated for a number of years with **Eataly**. "The first project we did with iGuzzini" explains architect **Thomas Bartoli**, head of **Eataly Design**, "was Eataly Smeraldo in Milan, a project that began with the restoration of the old Teatro Smeraldo. The choice of light sources was decisive for creating the various spaces and increasing customers' visual comfort. We chose to go with LED devices with a color temperature of 3000K that not only deliver significant energy savings but provide a warm ambiance. Different lighting levels were selected according to the functions of the various areas. For product display zones, Front Light projectors were chosen. In the various restaurant areas we used Diapason hanging fixtures that, with screens of various colors depending on the dishes proposed, help visitors get oriented. A softer, more enveloping lighting was planned for the gourmet restaurant Alice. iGuzzini's Underscore model was chosen to highlight the columns and create small luminous islands on the ceiling, while the Laser Blade fixtures, with their nearly imperceptible presence, provide the right level of light. The elegant Cup hanging fixtures, on the other hand, illuminate the counter of the open kitchen." iGuzzini was also the lighting technology partner for Eataly Chicago. «The format is the same as Milan, Bartoli continues, and reflects the image of Eataly all over the world, synonymous with Italian quality. That's why the lighting technology project needed to have the same characteristics and, in collaboration with lighting designers from Hugh Lighting Design, iGuzzini suggested installing Front Light, an essential product that combines aesthetics and functionality. In the design of Eataly Trieste as well, natural light meets and blends with artificial light. Inside the original 20th-century perimeter walls that housed the old wine warehouse, a glass body was inserted. Thus the outside light communicates with the lighting within in a continuous exchange. The staging of the 3 floors of inside spaces is consistent with the format of the megastore's other locations, perfect for both shopping and dining. In this case too, light has a fundamental role in directing and guiding consumers and engaging with them to keep them in the store and offer them an enjoyable experience that's memorable for the atmosphere and environment they experience».

«Different illumination levels were selected according to the functions of the various areas»



Thomas Bartoli Head of Eataly Design

cifically at the needs of this market is the "Laser Blade" solution, the first linear-recessed lighting system with an invisible source, and capable of emitting light that's circular, homogeneous, soft and comforting. It represents an innovation in the lighting sector since, thanks to these unique features, it can be completely integrated into the architectural context, an ideal choice for enhancing a space with the touch of class of a light source that goes unseen.

All new this year from iGuzzini is the Laser Blade XS, nicknamed "The Blade," a product whose design is minimalistic in every detail and whose components are practically invisible. Inspired by the art of the Lucio Fontana's famous "cuts," The Blade offers new expressive potential to lighting designers and architects, with the highest optical performance contained in a device of just 8 mm.



Arese's "Il Centro": an overhead view of the inside of Europe's largest shopping center

The Blade is equipped with innovative Tunable White technology, capable of regulating the color temperature through the variation of white from 2700K to 5700K. This technology is able to improve people's psychophysical well-being thanks to the possibility of obtaining a dynamic and rich light from the standpoint of the spectrum – similar to natural light – which influences the Circadian rhythms.

The Blade gives a space a distinctive ambience, contributing to elevate its image and quality. It's impact in the lighting world has been particularly significant, enough to merit an international tour with stops in London, Berlin, Paris, Lyon, Shanghai, Sydney, Auckland, Dubai and New York and win the prestigious "Interior Luminaire of

Arese's "Il Centro": saving Energy Thanks to Lighting

One of the most recent collaborations between **iGuzzini** and the retail world is the "Il Centro" project in Arese designed by **Michele De Lucchi**, **Davide Padoa** and **Arnaldo Zappa**, the largest shopping center in Europe.

Just outside of Milan, the new structure covers 92,000 square meters between 200 stores, restaurants, and bars, and an indoor/outdoor sports center. The entire complex was designed according to rigid energy efficiency and bio-sustainability criteria in line with the standards promoted by the **US Green Building Council** for the prestigious LEED Gold certification.

The entire complex was designed according to rigid energy efficiency and bio-sustainability criteria

Lighting contributes to this result, as all the fixtures used are LEDs, with an average energy saving percentage ranging from a minimum of 40% to a maximum of 80% with respect to the normal consumption of traditional light source systems. The LED devices are DALI and managed by an IoT-inspired remote control system. Internal and external light sensors integrate artificial and natural lighting.

Particularly innovative is the methodology utilized in the design of the roof, applied for the first time in the world to a shopping center: the covering's structure is in Glulam (a structural, layered wood made from sustainable materials) and is one of the largest ever made in Europe. Below the central wood covering are Front Light 6000 Lumens complete with emergency group and Reflex recessing. The two systems ensure a soft, general lighting, whose range is further extended by the notable height at which they're installed.

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the Year" prize at the 2017 Lighting Design Awards.

STAGING POSSIBILITIES

iGuzzini's Palco Low Voltage is a product that targets the visual impact needs of entrances and outdoor display areas, reproducing circles of light and quadrilateral forms adjustable through small external wings on the outside of the projector, as only much larger professional projectors are able to offer. Palco Low voltage constitutes the ideal solution to light store windows, niches, and display cases and details, representing the ideal tool for creating luminous staging with maximum freedom of expression.

The needs of a particular retail outlet vary according to its identity. The more exclusive a store is, the more talk there will be of accented lighting, with elevated factors of contrast and device flexibility for frequent changes in presentation. Here, light is staged through elaborate, almost museum-quality preparations.

In other cases the search for a general and uniform light may prevail, perhaps tunable white, capable of simulating daylight and exalting products displayed according to the variability of the hours of the day.

The predictions for upcoming years indicate that the commercial lighting and outdoor lighting sectors will be the principal drivers of growth in the market for LED lighting devices. Over the last few months, in fact, there has been more and more talk about Li-Fi, a technology that utilizes the visible light spectrum as a vehicle for data transmission. The illuminating body becomes a means of communication on WCL, Li-Fi, and beacon protocols, manageable through various types of devices.

Light thus becomes an element for creating new services based on the speed of information transmission, to the users' advantage. In retail in particular, beacon technology, in synergy with consumers' smartphones, can be useful for getting to know specific types of purchasing behavior, collecting data on consumer conduct, and reaching customers with messages and personalized promotions in the vicinity of stores or while they're wandering between the shelves and display cases.

In what may be a not-too-distant future, we'll be talking about indoor positioning, real-time tracking systems for people and things, and push notification, messages sent directly to customer devices for transmitting increasingly personalized information to solve problems or help satisfy needs.

$ 13,1 bln

ESTIMATED WORLDWIDE TURNOVER FOR LED FIXTURES BY 2021

54%

THE ESTIMATED SHARE OF COMMERCIAL LED LIGHTING IN THE TOTAL WORLDWIDE MARKET IN 2021

Source: IHS Markit



Arese's "Il Centro": the children's play area (photo: Paolo Carlini)

60%

INDOOR LIGHTING FIXTURES'S SHARE OF THE ITALIAN MARKET

55%

THE SERVICE SECTOR'S SHARE OF ITALIAN TURNOVER IN INDOOR LIGHTING FIXTURES

Source: elaborazione Databank



THE STORE: AN EFFICIENCY PERSPECTIVE

Grosseto's MareMà shopping center: charging station for electric vehicles

FROM A GLOBAL SPECIALIST IN ENERGY MONITORING AND ANALYSIS, A VARIETY OF SOLUTIONS FOR REDUCING ENERGY CONSUMPTION IN THE RETAIL WORLD.

The banner of environmental sustainability can be used by companies for more or less perfectible operations of "greenwashing," or it can become the genuine core of a company's strategy, truly orienting its overall market choices. The latter is certainly the case with the **Schneider Electric** Group, a global specialist in energy monitoring and analysis which has long been targeting energy efficiency in particular, marketing a series of specific services and solutions capable of reducing customers' energy consumption. Energy efficiency is a challenge of great importance for a retail world facing the daily task of reconciling quality products at low prices with the highest-possible profit margins.
Schneider Electric's recipe is that improved energy efficiency is a simple and ideal way to reduce expenses: in fact, a 20% reduction in energy costs (an easily achievable goal) gives a hypermarket the same benefit as a 5% increase in sales, which is quite substantial.
But how can energy efficiency be enacted concretely in these environments? Take the case of food preservation, which represents the principal process in the food retail sector and can account for 35-50% of a supermarket's energy consumption.
Schneider Electric, in collaboration with its network of partners (the EcoXperts), can identify inefficiencies in the refrigeration process and offer solutions capable of reducing energy waste through monitoring and the maintenance of optimal temperatures in refrigerator cells and aisles.

518, 000

ELECTRICAL VEHICLES SOLD WORLDWIDE IN FIRST 3 QS OF 2016, +53% COMPARED TO THE SAME PERIOD IN 2015

70,000

PUBLIC, ELECTRIC VEHICLE CHARGING STATIONS INSTALLED IN EUROPE BY THE END OF 2016

Source: Polytechnic University of Milan

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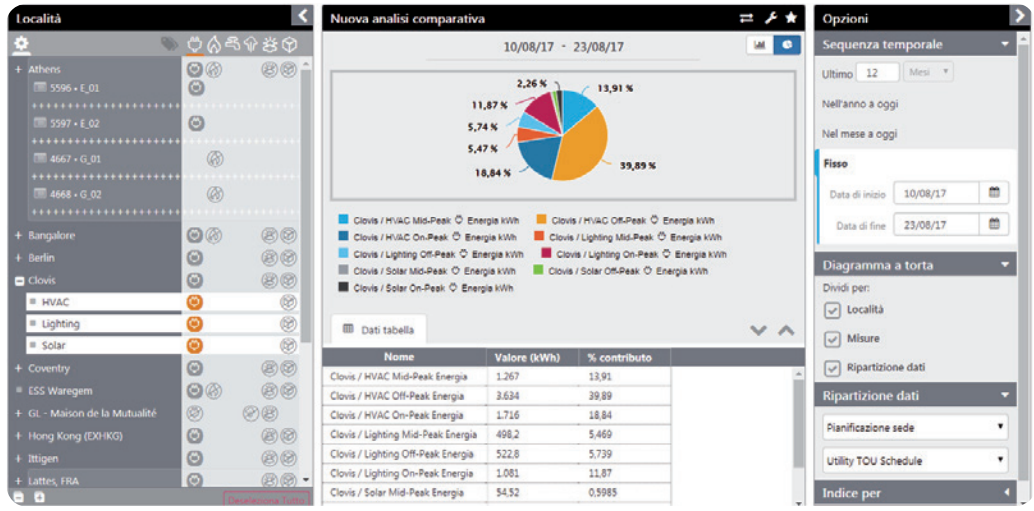
COMFORT IS INTEGRATION

Another fundamental point, of course, REGARDS a store's heating and air conditioning (the so-called HVAC systems), crucial for the comfort and purchasing experience of the end users. For Schneider Electric a key step in limiting energy consumption is the adoption of systems to control and manage ventilation and temperature.
Further savings are obtainable with the installation of an integrated architecture for the area-by-area command and control of heating, ventilation, air conditioning, and food refrigeration systems.
Naturally, dynamically-regulated lighting also plays a fundamental role in stores because it improves customers' perception and is capable of attracting them (or not) to the products displayed.

SUSTAINABLE BUILDINGS AND TRANSPORT

While the simple passage from an old lighting system to Led certainly represents an important move, that alone, at least from Schneider Electric's perspective, is not sufficient: even more strategically decisive is the possibility of adopting a lighting control solution that enables reconfiguration in relation to changing display requirement, such as to easily ensures savings.

These and other solutions have been tested at the highest level by Schneider Electric through its participation in the EU-funded **CommONEnergy** project, begun with the goal of providing concrete tools and [p. 14] innovative solutions to succeed in transforming



An integrated system of energy management makes it possible to provide operators with personalized information to optimize the use of resources, reduce waste, and improve a store's efficiency and sustainability

Paterno Group: «A Quick Installation of the Solution»

An effective monitoring process can make a significant contribution to reaching energy efficiency goals, as demonstrated by the recent experience of the **Paterno Group**, which for years has been undertaking a process of rationalizing energy consumption in roughly forty stores of its CasaTua and EuroBrico brands. As **Salvatore Busana**, head of the group's technical office, relates, the Paterno Group has succeeded in improving its energy performance by 30% compared to the recent past, applying a series of measures like the installation of LED lighting systems.
Some percentage points, however, must also be attributed to the monitoring system installed in 2017 thanks to the collaboration of the **Schneider Electric** group (which also supplied new fuse boxes at the locations in question).
The monitoring system implemented makes it possible to directly monitor individual centers of consumption, enabling the real-time detection of inefficiencies and anomalies with respect to the curves of ideal usage and, therefore, timely interventions.
The Paterno Group chose Schneider Electric for several very clear reasons: «Schneider's products are compatible with many fuse boxes. Also, from an operations standpoint, they've been extremely quick about installing their solution. Lastly, another particularly important aspect concerns the program for managing the collected data, which is easy to use even for those without particular expertise», Busana points out.

«The program for managing the collected data is easy to use, even for those without particular expertise»



Salvatore Busana,
Head of the Technical Office
Paterno Group

shopping centers into examples of energy efficiency.
More specifically, Schneider Electric has contributed to the European project by proposing an innovative system of smart building management known as BEMS, along with a solution dedicated to the smart management of electric vehicle charging stations, like those installed at the Canaletto shopping center in Modena and the MareMà shopping center in Grosseto.
As far as the Tuscan complex is concerned, two charging stations for electric vehicles were installed which, thanks to their connection to the building's photovoltaic system, make it possible to "fill up" with a 60% car battery recharge in roughly two hours; the system also resolves the accumulation

Modena's Canaletto Shopping Center: savings resulting from energy efficiency interventions

Energy Conservation Measure (ECM)	Heat savings kWh/m²/y	Electricity savings kWh/m²/y	Reduction in CO2 emissions kg/m²/y	Cost reduction euro/m²/y
Building shell retrofitting	2.1	7.3	4.2	0.9
Advanced lighting concepts in supermarkets	0	106.2	54.1	12.7
Replacement of refrigeration units	10.3	110.5	58.7	13.5
Linear air diffusers	N/A	N/A	N/A	N/A
More efficient HVAC	78.2	–15.5	11.0	–0.2
HVAC-R coupling	0	11.4	5.8	1.4
GRL lighting in the halls	0	10.6	5.4	1.3
iBEMS	0	12.7	6.5	1.5
Smart coatings	0	7	3.5	0.8

* any type of design or technological measure aimed at reducing a building's energy consumption

Source: CommON*Energy*

Coop Alleanza 3.0: «Energy Savings of 38% at Modena Canaletto»

How long does it refurbish a retail outlet from an energy standpoint?
Less than most pessimists would probably expect, given that there's a very clear and realistic project to work with.
This is demonstrated by Modena's Canaletto shopping center, which in summer 2016 was completely modernized in just over 40 days thanks to the intervention of **Coop Alleanza 3.0** in partnership with players like **Schneider Electric**.
As Coop Alleanza 3.0's head of property and development, **Davide Roncaglia**, explains, "For some years the store had been in real need of drastic changes to improve overall environmental sustainability and energy efficiency.
The intervention was completed quite quickly. And Schneider Electric's solutions made an important contribution to this, particularly through the installation of the system for regulating and monitoring group consumption (not just lighting, then, but also heat pump absorption, refrigeration system absorption, general electricity consumption), as well as the supply of instrumentation, parts and switchboards.
More than a year later it's already possible to take stock of the results achieved: during the first 12 months, there was energy savings of 38% compared to the previous year.
A significant result that could be even further increased next year by trying to maximize the performance made possible by the Schneider Electric management system.

«The first 12 months saw energy savings of 38%»



Davide Roncaglia, Head of Property and Development at Coop Alleanza 3.0

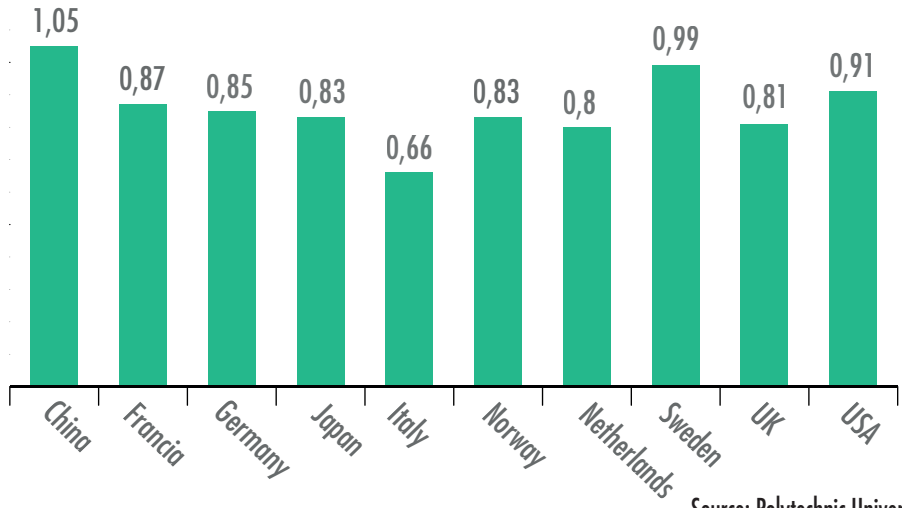
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problem with specifically-installed batteries.

A SINGLE MONITORING SYSTEM

MareMà's most innovative feature was the choice to adopt a system of smart energy control that makes it possible to use part of the energy produced by the photovoltaic system for car charging or to supplement the energy supply of shopping center itself during times of peak consumption.
The European project saw the use of EcoStruxure, Schneider Electric's platform of integration that created a single tool for energy monitoring, managing the HVAC, lighting and i-Quadro smart fuse boxes, acquiring temperature data for the food refrigeration system, and counting the people in the various parts of the buildings. In fact, a smart "people-counter" sensor system was created to optimize energy consumption and maximize comfort as a function of the number of people present , as well as to better manage the registers by detecting the number of people in line and wait times. It's this attention to data and its proper management that, according to Schneider Electric, is the fundamental step for increasing efficiency – and not only in energy terms – in shopping centers.

The global picture of charging infrastructure (ratio of electric vehicles to charging stations)



Source: Polytechnic University of Milan

Schneider Electric sponsor of the "Insegna dell'Anno" Business Awards

A new category was introduced for the 2017-2018 Insegna dell'Anno Awards, in its tenth year in Italy: the Sustainability Prize, joining the long-time "Insegna dell'Anno Italia", "Italian Web Store", and "Cross-Channel" prizes. These awards represent the Italian chapter of the European Retailer of the Year awards which stemmed from a project by **Q&A Research & Consultancy** in the Netherlands, now present in 10 countries and developed in Italy by **SEIC-Studio Orlandini**, with the support of *Largo Consumo* as main media partner and co-organizer of the award ceremony. This additional award category was made possible by the involvement of **Schneider Electric**, which proposed a special recognition for a theme particularly dear to this sector, and which was eventually awarded to **Lidl**. Commenting on Schneider Electric's decision to lend its support as a partner, **Roberto Gerico**, Schneider's Vice President of EcoBuilding, interviewed the night of the award ceremony, offered the following motives: «We thought it important to play a leading role in assigning the Sustainability Award, seeing as we're firmly committed with our technologies in making energy more reliable, safer, and more efficiently managed. We are a tech company, with a staff of 3,000 in Italy. Our technologies are directed toward the control, automation and management of energy, and allow our customers – many of whom have received awards tonight, a fact which we're particularly proud of – to enjoy more secure spaces in terms of energy management. For us, sustainability means consuming the right amount, consuming well, and improving the environment. This means allowing customers to dedicate themselves to their core business and work with serenity in their field of business». Roberto Gerico also had the honor of presenting other awards to **Decathlon**, **Bricoman** and **L'Isola dei Tesori**, companies with which Schneider Electric is pleased to collaborate.



«We're firmly committed to making energy management more efficient; that's why we gave an award for the most sustainable company»

Roberto Gerico,
Vice President of EcoBuilding,
Schneider Electric



PROTECTING AND ENHANCING THE VALUE OF REFRIGERATED GOODS

Madrid's El Corte Inglés Princesa: refrigeration systems and furnishings

FROM REFRIGERATOR AISLES TO MONITORING TO CO2-POWERED SYSTEMS: ARNEG'S GOAL IS TO CREATE SOLUTIONS WITH REAL BENEFITS TO END USERS.

Innovation also means having the courage to dare and go down unknown paths, proposing timely solutions in order to interest the market and end customers. This is the basis of the philosophy at **Arneg** Group, which for decades has succeeded in fashioning itself into a leader in the world of commercial refrigeration.

This is a sector which, at present, driven by EU directives and increasing awareness of the need for energy efficiency, has a profound need for innovation.

Arneg Group responds to this need by offering an extensive range of products capable of meeting the multiple refrigeration needs of the retail sector.

If innovation is to be sustainable from a market standpoint it must naturally be capable of bringing real benefits to end users. This is perfectly clear in the case of Air System, one of Arneg's latest solutions, capable of delivering a genuine revolution in one of the most talked-about segments in the world of commercial refrigeration, thanks to a new closing system for vertical wall-mounted refrigerator aisles.

52%

REFRIGERATION-LINKED ENERGY CONSUMPTION FOR A TYPICAL SUPERMARKET

Source: University of Rome La Sapienza

76%

INCIDENCE OF THE FRONT AIR CURTAIN ON ENERGY REQUIRED FOR REFRIGERATION IN OPEN VERTICAL UNITS

Source: Arneg

33%

DIRECT INCIDENCE OF REFRIGERATING SYSTEMS ON A SUPERMARKET'S TOTAL EMISSIONS

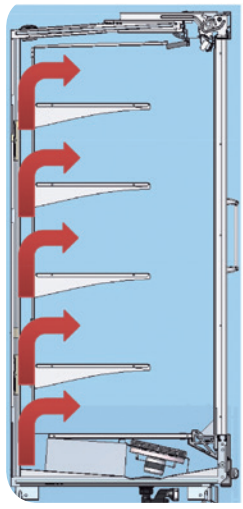
Source: R. Gluckman (Refrigeration equipment and refrigerant used in the cold chain)

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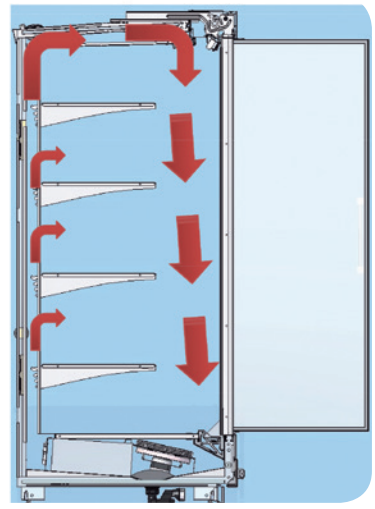
DEFROSTING NO PROBLEM

As far as refrigerator doors are concerned, despite the undoubted advantages in terms of energy savings that these are able to deliver, retailers can still be quite hesitant concerning the possible consequences for the behavior of end consumers, who might be "psychologically" restrained from purchasing by the presence of barriers that get in the way of products, limiting their visibility and, to some extent, their accessibility.
Arneg has been doing its part on this front since 2006, with a series of products conceived specifically to reduce refrigerator energy consumption while maintaining the same high performance in terms of temperature. With Air System, already installed in some Italian and European supermarkets in 2017, Arneg has succeeded in going one step further, offering an innovation capable of attacking one of the main problems of the traditional refrigerator aisle: defrosting.
All refrigerators produce frost that builds up on the heat exchange coil and increasingly hinders the passage of air: a problem, given that all refrigerator aisles in large supermarkets function by forced air.
Refrigeration systems must thus be cyclically turned off (defrosted) and then reactivated, in a constant on/off alternation that's detrimental both energetically and economically.

A New Distribution of Air



Perforated rear panels increase the temperature of the coldest products within the limits of the temperature class
Source: Arneg



A curtain of dynamic air shields the frontally-exposed products, thus bringing the warmest products to a substantially stable temperature

Il Gigante: «"Perfect Refrigerator Aisles" in Daverio with Arneg Air System»

To achieve greater energy efficiency you need, among other things, the courage to take risks, choosing technologies that are extremely innovative, maybe even practically never used before. Such was the winning move made by Il **Gigante**, which, for its 5,000-m² hypermarket inside a shopping center in Daverio (Varese), chose the brand-new technology of **Arneg Air System:** a unique air circulation system inside the refrigerator aisle, capable of optimizing energy efficiency. As the chain's technical head **Andrea Brunu** tells it, the Daverio store was inaugurated 20 years ago, but over the years has undergone profound changes aimed at greater efficiency, for example with the installation of LED lighting and pellet-fueled ovens in place of electric ones.
All that was missing was an extremely efficient refrigeration system, and it's no coincidence that Arneg was chosen: «We have a twenty-year relationship with Arneg, it's a very flexible company, and since we're always looking for new solutions and often have unique requests, this is an extremely important aspect. Their technicians are capable of working side by side and designing the refrigeration system the customer needs. Many of their competitors aren't able to do so with the same flexibility, because they tend to offer more standardized solutions. The choice of Arneg Air System was influenced by the evaporation temperatures, which significantly reduce consumption. Often there are system improvements that actually worsen the quality of the product, but in this case the refrigerator aisles are perfect, with cutting-edge doors that are transparent even around the edges».
The collaboration between Il Gigante and Arneg is destined to continue in the future: the group has already scheduled 5 other renovations and a new opening in 2018, which, as far as refrigeration is concerned, will be largely entrusted to Arneg solutions.

«We have a twenty-year relationship with Arneg, it's a very flexible company»



Andrea Brunu, Technical Head of Il Gigante

A MORE UNIFORM TEMPERATURE

Thanks to Air System, Arneg has succeeded in the difficult challenge of creating a vertical, closed refrigeration system (horizontal models are still being studied) capable of consuming very little energy and simultaneously achieving evaporation at near-zero or even slightly negative temperatures, thus avoiding the evaporator brining.
This result was made possible by intervening on various features: for example, Arneg increased door insulation coefficients by adopting special coatings, and improved the interaction between the vents and the evaporator coil. But the feature that was the main focus of improvement was the uniformity of temperature within the refrigeration unit: in traditional systems, in fact, the temperature of the various items tends to diverge with some particularly cold points, well below the 4° C that is universally considered optimal for food preservation.
With Air System the difference between the coldest and warmest points of the refrigerator can be kept to



Aspiag in Noale: the fish counter

The Impact of a Supermarket Energy Management Strategy

Type of Intervention	Energy Savings
Investment Renewal (end of life cycle)	>50%
Low cost Retrofitting	10-40%
Near-Zero Costs (best practice)	5-10%

Source: Schneider Electric

Aspiag: «The Store's Consumption Divided by Area»

It's difficult, if not almost impossible, to be energy efficient if you don't know your consumption. Fortunately, modern monitoring solutions have long made it possible to map in real time the energy needs of retail outlets, guaranteeing significant savings. This is confirmed by the experience of **Aspiag Service**, licensee of the **Despar**, **Eurospar** and **Interspar** brand for the Northeast of Italy, which in June 2015 carried out a thorough intervention to increase efficiency at the Eurospar in Noale (Province of Venice), in collaboration with Arneg.In addition to the usual delivery of the refrigeration system and the supply of the aisle setup, the core of the project, as Aspiag Service's Director of Contracts **Massimo Salviato** recounts, concerned the implementation of a system of building automation. In substance this system supervises all the monitoring solutions already installed in the store, but which were conceived to manage maintenance and emergencies, rather than foster efficiency. «In this store there are already control systems for HVAC, lighting, and refrigeration, the last of which Arneg itself supplied. The new building automation solution takes the data from these 3 control systems and brings them together in a single processing center. This way, through a simple web portal, we can view the store's consumption divided into its various areas (refrigeration aisles, refrigeration cells, etc.), and can even control it remotely, modifying its settings. Arneg's great leap forward was to create something simple and effective from the standpoint of both systems interaction and visualization, so we can control everything we need to». More precisely, Aspiag expects to obtain consistent savings on their energy bills, with a 10-15% reduction in refrigeration consumption, which account for 45% of the energy needs of the entire store.

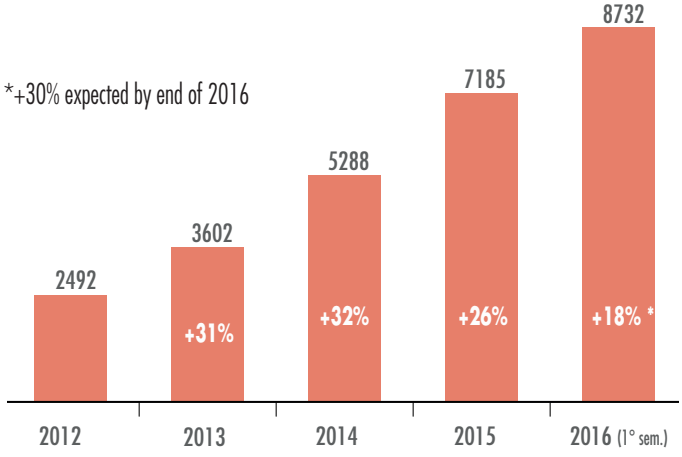
«Something simple and effective from the standpoint of systems interaction»


Massimo Salviato, Director of Contracts at Aspiag Service

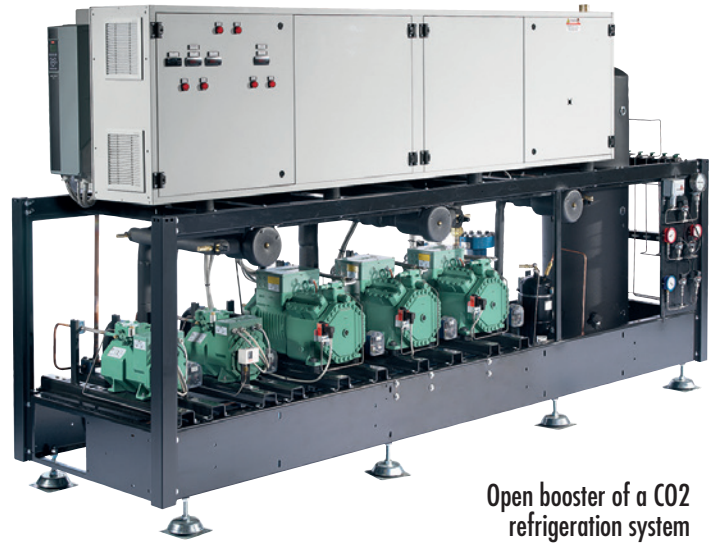
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2° C, with evident benefits from an energy-consumption standpoint and for keeping the merchandise in absolutely safe, hygienic conditions. With this mix of solutions Air System can ensure a 37% reduction in energy consumption compared to current door-equipped refrigeration solutions, as confirmed by the monitoring performed on the first systems installed in Italy and abroad.

The Increase in Stores Based on CO2 Refrigeration Technologies: 2012-2016



Source: Shecco



Open booster of a CO2 refrigeration system

REMOTE MONITORING

As far as monitoring is concerned, one of the feathers in Arneg's cap is certainly its ultra-modern continuous control center, in which over forty people are constantly working on the IRIS and IRIS ENERGY systems for the reduction and control of glitches and energy waste in refrigeration systems like display windows and refrigerator aisles, as well as for refrigerated cells and commercial refrigeration systems. For those unaware, IRIS and IRIS ENERGY rep-

Madrid's El Corte Inglés Chooses Arneg's CO2 Systems

The need for greater energy efficiency and sensitivity to environmental issues certainly isn't the sole prerogative of Italy or Italian retailers. Such is demonstrated by the case of one of the European retail sector's most famous names, the Spanish chain **El Corte Inglés**, which in order to optimize the functioning of one of its flagship stores, Madrid's El Corte Inglés Princesa, decided to go with solutions from a refrigeration specialist, the Italian group **Arneg**.

A partnership which, as project manager **Daniel Fernandez Delgado** tells us, arose first and foremost from a need to dispose of refrigeration systems and furnishings that function according to the technical and commercial trends that end customers now demand as standard. Meaning they need to be founded on environmental sustainability, a theme that's particularly close to the heart of the Iberian chain, which for years has been investing time and resources in developing principles of Corporate Social Responsibility (CSR). As far as the specific case of the Madrid store is concerned, before Arneg's intervention, the original refrigeration system had high energy consumption and a high R-404 charge, meaning the "famous" HFCs, increasingly opposed by national and EU legislation.

They chose to go with a transcritical CO_2 refrigeration system with obvious advantages in terms of energy savings and sustainability

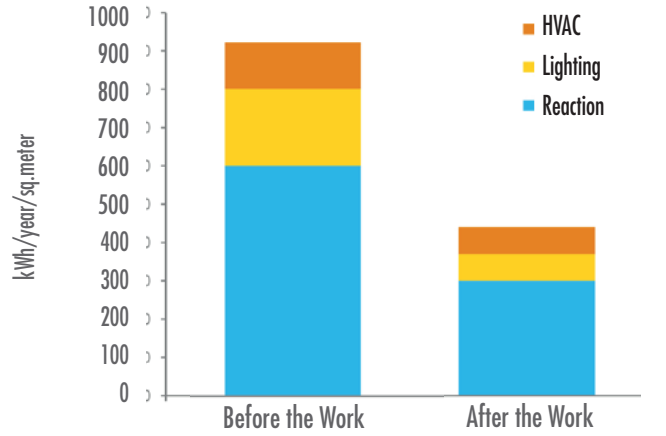
That's why El Corte Inglés decided to begin a new chapter and choose a transcritical CO2 refrigeration system, installed just a few months ago, with obvious advantages from the standpoint of reduced energy requirements and environmental sustainability. The project has worked like a charm, confirming the consolidated partnership between Arneg and El Corte Inglés. Indeed, the Spanish retailer is already planning to use the Italian company's technologies for its future refrigeration needs as well.

resent Arneg's web management systems, created for a retail outlet's specific support needs via remote-control BMS (Building Management System), which allow end customers complete, real-time control of the entire management of their store, and help them identify not only problems but also areas of standout performance.

CO2 SYSTEMS FOR EVERY NEED

With these solutions Arneg technicians can organize and share with customers the normal and emergency technical maintenance of refrigerator groups and commercial refrigeration systems, but also perform energy consumption analyses to plan effective energy saving strategies that are personalizable according to the size and unique qualities of the store. This attention also has consequences on the coolant used in Arneg's refrigeration devices: the choice was made to spread the values of sustainability in retail, using the applications of CO_2, with multiple catalogue solutions capable of creating real innovation. For example the BPC Subcritical CO_2 Cascade Refrigeration System is a low-temperature system, ideal for small- and medium-sized stores. The HCP Transcritical CO_2 Refrigeration Unit, on the other hand, is compact and suitable for outdoor installations, and equipped with an air-powered gas cooler and on-board fuse panel. For medium-sized stores there's the MPC Subcritical CO_2 Cascade Refrigeration System, designed to guarantee less bulkiness and greater savings. Medium-to-large stores, on the other hand, can opt for the Booster Transcritical CO_2 Refrigeration System, a TN-BT integrated system. The alternative is represented by the HPM Subcritical CO_2 High-Power Multi-System, conceived to guarantee high efficiency, limited bulkiness, low noise level, low cost and reduces expenses for running and maintenance.

Energy Consumption of a Supermarket before and after Renovation Using Advanced Technologies (in kWh/m²/y)



Source: Shecco

Aspiag Rovigo: Fruitful Integration between Arneg and Eliwell

Vendors from different but contiguous sectors can collaborate to the benefit of the end customer: this is demonstrated by the case of the **Aspiag** supermarket in Rovigo, refurbished in late 2017, which saw the fruitful collaboration between **Arneg** and **Eliwell** (part of **Schneider Electric**). The former supplied the refrigerator aisles and power stations, managed by the cutting-edge electronic control systems developed by the latter. In this specific case there are roughly eighty refrigeration units equipped with a single controller model, the RTX 600 DOMINO, which guarantees the system's ease of use for the customer. Given that the Arneg supervisor is totally integratable with Schneider/Eliwell's BEMS solutions, it's possible to monitor both energy and refrigeration data on a single platform.



Aspiag in Noale: the store's frozen food department

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EFFICIENCY COMBINED WITH SIMPLICITY

AT ELIWELL, MODULAR TECHNOLOGIES FACILITATE MAINTENANCE AND DESIGN AND TAKE ON THE CHALLENGE OF CO2 SYSTEMS IN WARM CLIMATES.

Under the influence of European directives and a growing attention to environmental sustainability, the refrigeration sector is also undergoing a process of change that requires greater attention to the savings needs of its customers, subject to growing pressure concerning profit margins.

Eliwell, a part of the **Schneider Electric** group, and a specialist since 1980 in integrated systems for the regulation of refrigeration projects, HVAC and building automation for industrial or commercial applications, could not remain indifferent to this revolution. Eliwell decided to face the market with a full commitment to the concept of energy efficiency, but without neglecting characteristics that are just as important for those who have to use the technology in the field: ease of use and ease of installation.

A strategic choice, inspired by analysis of the situation in Italian companies and retail outlets, as well as among technicians and maintenance workers, all realities that are already familiar with these profound changes and need to be helped with solutions that aren't overly complex, in both "start-up" and maintenance. The latter, in complex refrigeration systems, necessarily becomes complex as well and over time weighs increasingly heavily on the costs of end customers, who might initially have thought they were saving money thanks to the investment in energy efficiency.

This explains Eliwell's choice to use consolidated and modular technologies, capable of functioning without the requirement of constant intervention by specialized personnel. All this is quite clear concerning one of the most innovative and, at the same time, delicate issues in the entire world of refrigeration.

1,244

THE NUMBER OF NORWEGIAN STORES THAT USED TRANSCRITICAL CO2 TECHNOLOGIES IN 2016

€8.732 tn

INCREASE IN TURNOVER OF STORES THAT USED C02 TECHNOLOGIES IN 2016

Source: Shecco

THE PROBLEM OF WARM CLIMATES

Eliwell has chosen to go with 2 consolidated forms of refrigeration architecture: the booster system and the booster system with parallel compression, among whose strengths are the DOMINO series controllers, conceived for a considerable reduction of electrical consumption and higher efficiency over time. The solution is composed of the EWCM 9000 PRO/CO2T DOMINO, which works with average pressures up to 32 bar, and the new RTX 600 /V DOMINO electronic controllers with adaptable regulation at low heat for controlling refrigerator aisles. This combination allows for the performance of an ejector solution with a simpler booster circuit. The possibility of raising the pressure by more than 30% leads to an energy efficiency of circa +3% per each supplementary bar, thus easily surpassing 10-15% of energy savings. The challenge is in warm climates above 30° C that, because of the chemical and physical properties of CO_2, drastically reduce the performance of refrigeration units. The group is tackling the problem beginning with the booster or the booster with parallel compression, but integrated with a small mechanical under-cooler that provides the desired performance in a simpler way. For now the solution is still in the experimental phase, with promising results.

10-15%

POTENTIAL ENERGY SAVINGS WITH DOMINO-SERIES CONTROLLERS

Source: Eliwell

The use of transcritical CO2 technologies in stores overall and in the first 5 european markets: 2013-2016 (n. of stores)

	2013	2016
	429	1.958
	441	1.227
	17	255
	15	91
	6	67
Total	**2.885**	**8.732**

Source: Shecco

Migros: more efficient refrigeration with Eliwell and Biaggini

Already back in 2010 the Swiss retailer **Migros** launched a genuine climate and energy strategy with Objective 2020, adopting a series of provisions to achieve greater energy efficiency and simultaneously promote the use of energy from renewable sources.
With results that, as of today, may be defined as extremely satisfying. Between 2010 and 2016 Migros's greenhouse gas emissions diminished overall by 20.6%. Contributing in particular to this reduction was the use of LED lighting solutions and CO2 refrigeration systems, as well as the modernization of their refrigeration units and LED lighting system. In the same period, their electricity consumption in the retail sector diminished by 6.7% overall, with clear savings particularly at the storewide level. In 2016 alone, thanks to the installation of CO2 refrigeration systems, glass doors in the refrigerator aisles, and LED lighting, electricity usage in stores fell by 3% with respect to the previous year. As far as refrigeration is concerned, Migros could take advantage of the consolidated partnership between **Eliwell** and **Biaggini Frigoriferi**, leader in the commercial refrigeration sector in the canton of Ticino. The two companies, as far back as 2014, worked together to experiment new, high-energy-efficiency refrigeration systems which saw the use of carbon dioxide as a natural coolant fluid. The collaboration went from strength to strength, such that in 2017 CO2 refrigeration systems were installed in two Migros supermarkets in Ticino and a restaurant in the canton of Vaud, and others are scheduled for this year. More precisely, these are CO2 transcritical cycle systems (made without ejectors) with the Eliwell DOMINO electronic regulation system, complete with cutting-edge TelevisGo supervision. Thanks to this technological solution **E. Biaggini** is able to provide assistance services 24 hours a day, 365 days a year, throughout the canton of Ticino, guaranteeing optimal maintenance of the energy performance and functioning of the cooling systems in Migros supermarkets.
This solution, thanks also to the precious contribution of Eliwell regulation tools, has brought Migros notable energy savings, on the order of 15% compared to the previous carbon dioxide-based systems.

The solution provided thanks to the partnership between Eliwell and Gruppo Biaggini made it possible to reduce energy consumption by 15%

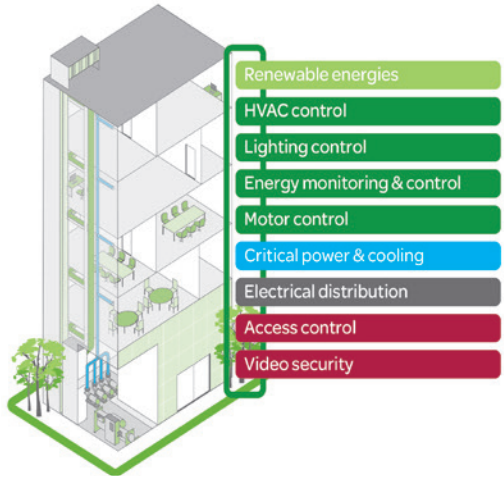
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Devices for the control and efficient management of buildings

ENERGY CONSUMPTION UNDER CONTROL

Schneider Electric has developed the EcoStruxure platform, capable of optimizing building efficiency from the planning stages to integration and activation, in order to guarantee maximum efficiency throughout the building's life cycle and increase as much as possible the productivity and comfort of its users. The core of the solution is the smart sensors that command and control the systems and monitor energy consumption. Thus the first fundamental step is measuring consumption levels of electricity, heat, water, etc., as well as the connected environmental parameters. Then, the gathering and prompt analysis of the data from various sources makes it possible, through the digital platform at the foundation of the BEMS, to better manage the building's overall energy performance, thanks as well to the numerous operations that are performed in a fully automated manner. The prompt reporting allows for the scheduling of subsequent interventions to further increase efficiency based on timely and reliable data.



The logic of the BEMS control system for refrigeration, lighting, HVAC and other supermarket services

up to 50%

THE POTENTIAL ENERGY EFFICIENCY OBTAINABLE THROUGH THE ACTIVE CONTROL OF BUILDING SPACES

more than 30%

SAVINGS ON ENERGY COSTS WITH ECOSTRUXURE-TYPE SYSTEMS

70%

PERCENTAGE OF DECISION-MAKERS CONVINCED BY THE BUSINESS VALUE OF THE IOT

Source: Schneider Electric

Gicap: refrigerator consumption, under control and more sustainable

For retailers, investing in energy efficiency offers a dual advantage: the reduction of energy consumption and the approval of customers, increasingly attentive to environmental sustainability issues.
With these premises the group **Gicap**, a Sicilian chain active with various trademarks and retail outlets, undertook, in collaboration with **Eliwell** and **Schneider Electric**, a rigorous path toward greater efficiency. As energy manager **Attilio Rozzato** recounted, the first experiment in this direction took place last year and concerned a store of roughly 1,300 m² on the island of Lipari. A system of adaptable controllers was installed that called for the use of electronic valves destined essentially for managing the refrigeration circuit and making it more efficient, adapting the system to the outdoor climate conditions and the requirements of the indoor thermal loads. "At the end of this test run we experienced a reduction in both maintenance and electricity costs. To be more precise, we saved roughly 25% on energy consumption related to cold production, or €800 a month, including maintenance costs," Rozzato explains. Speaking of maintenance, Gicap enjoyed a notable reduction in breakdowns because the solutions provided by Schneider Electric and Eliwell make it possible to monitor the system's parameters in real time and quickly identify and report malfunctions and anomalies. The Lipari store, explains CEO **Francesco Capone**, won't be an isolated case: «We're now having many other systems made as well, because for us it's extremely important to lower costs. These new tools make it possible to recoup your investment in roughly two years and offer better service in the store».



From left, Attilio Rozzato, Gicap's energy manager, Caterina Gullifà, a collaborator, and Francesco Capone, Gicap's CEO



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