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Technology, Trends & Other Influences on Parking

Where are we in terms of parking technology?

The North American parking market is recognized as the largest in the world, estimated at anywhere between $20 and $25 billion in annual revenues. You'd think that would translate into leading the world in technology when it comes to parking revenue control equipment, automated parking structures or more progressive services or payment methods.

Unfortunately, that isn't always the case - like any venture we have our ups and downs. We excel at management and organizational skills in North American, given the competitiveness of our parking industry. We benefit from various discounted rate structures, validation programs and incentive programs at a level of complexity just not seen in Europe. The fact is that we are slow at times to accept new technological ideas. This may be due to our service-orientated culture, our need to interact with other humans rather than machines, and that we have no governmental strategy leading the way. Whether that's good or bad is for you to decide. But the question before us is, Why do we not lead technology in the parking industry as we once did?

There is a perception that the Europeans seem to be far ahead of us, so the question again is, why?

Is it fact or fiction? Canada is somewhat more progressive in this area. Canadians seem to have an ability to access technological innovation from Europe better, perhaps because Canadians have a much stronger connection to Europe compared to its neighbors to the south.

We are all products of our own culture, translated - we're products of our government's polices and that reflects on the way we conduct business. Europeans tends to be more socialized compared to North America. Now, why does that make a difference? In short, I have found that governments in Europe get more involved in day-to-day life; for instance, business partnerships within the community and industry. It is not unusual for a governmental agency, such as the post office, also to be a bank and compete with commercial banks. Nor is it unusual for government agencies to be involved with airlines, auto manufacturing, healthcare and telecommunication.

Why does any of this make a difference? For a simple reason - when government is a partner, success may be legislated, profit may not be a determining factor, and R&D costs may not matter as much.

To maintain its competitive edge the German railway solicited the private sector to develop a system so its riders could automatically select and pay for their destination without intervention with a human ticket agent at thousands of stations across the country.

Comparable to the space race when America stated its goal to reach the moon, they financed the research and development and harnessed talent from across the country with the reward being a contract to supply all rail stations going forward. The result was the development of a reliable magnetic ticket transport and a sophisticated machine that listed hundreds of destinations all with the convenience of a push button. This later became the basis for the first machine-readable parking ticketing system to enjoy any success commercially in Europe.

Similarly, the French telecommunication industry developed the much-advanced smartcard or chip card. There are countless examples of this kind of interplay. Parking in Europe is a mixture of non-profit and for-profit installations, with a majority operated by municipalities, where only a small fraction of private operators exist, as compared to North America. Granted, the ratio of European private operators has increased in recent years.

Here in North America, the parking industry has been primarily private entrepreneurs with some municipal facilities. Even municipal facilities seem to go through periodic on-and-off trends toward privatization, as cities look for new capital to fund budgets.

When a parking structure is privately run, it tends to have different priorities from state-run facilities. Operators become experts at management and record-keeping, often doing it with marginal investment. This was especially true during the last half of the 20th century when labor was relatively cheap.

Integration of new technology was slow as cost justification was not always easy when labor was cheap. The industry had generally been serviced by small manufacturers with limited production runs and resources, so costs were high. Couple that with relatively small markets compared to other industries, consumers were satisfied with the less-technical status quo. All this has changed, however.

Technology is not the only factor that has lead to differences between Europe and North America. Culture plays

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The FUTURE

a big role in how a society sees and willingly interacts with technology. Europeans are less apprehensive about interfacing with automation, whereas we in North American like the human touch known as customer service. We want to be taken care of and there are times when dealing with a machine discourages some end-users, possibly depending on their generation's technological tendencies.

This brings us to today and how technology affects our daily lives, both here and abroad. The fact is times have changed. For those who haven't noticed, the parking industry is changing at a phenomenal rate. Technology is overtaking all aspects of our delivery systems, products, features, and services. How we deal with these changes will be the single biggest key to success and determine whether we stay competitive.

A new generation of North Americans is increasingly more comfortable with technology, including manufacturers, parking operators, municipal directors, and distributors as well. No one would argue that there has been a great convergence in IT for all facets of parking, whether "on street or off-street". Project specifications have grown in complexity to reflect technological developments. Parking operators are looking at new technologies to give them the competitive edge. Parking administrators now tend to defer to an IT specialist who often has the last word about the type of system architecture installed.

Understanding what is currently available in the marketplace for different types of equipment, features and installation techniques is a challenge these days. Equally challenging is tracking the constant changes in the technological backbone of high-end systems, which significantly impact the parking equipment the public uses. Just as important are the new system advances being introduced worldwide which merge the web-based technologies into new conveniences for customers and operators alike.

What does the future hold in parking technology?

In years to come, I predict that our industry will continue to be represented by an ever-increasing number of international manufacturers since parking is big business worldwide. As auto-ownership evolves worldwide, the need to park autos will continue to be both a problem and an opportunity. This opportunity will draw new ideas and tremendous innovation.

I believe that most of the advancement for the foreseeable future in parking will surround the Internet. Web-based products are just now emerging and being integrated. The internet is affecting our daily lives, with the latest generation increasingly comfortable with its use. Entrepreneurs have come up with innovative systems that can seamlessly interface with various types of parking operations. These systems go a long way in providing clients with fantastic conveniences never before available, and more are being introduced every day. Parking managers want to differentiate themselves from their competition, or a least provide their clients with new and convenient services they appreciate and need. Consider viewing the Web as a never-ending source of evolving solutions at your disposal.

Smart components are now IP-ready (internet protocol). These products enable managers to call up a facility online and move down to the system level, even to the equipment-level, from anywhere in the world to see what's going on. Soon you'll be able to drill down to the actual PC board and even the component levels for diagnosing problems. Facility owners and parking operators are currently updating reports and downloading instructions for their facilities remotely.

End-users are purchasing parking tickets from home. Operators are updating reports and downloading instructions to their facilities at the click of a keystroke. Customers are using the internet to reserve their own parking spaces in ➤

HERE ARE JUST A FEW INTERNET EXAMPLES

a Electronic validations enable professionals within an office building to pay for their client's parking so their client doesn't have to. The receptionist identifies the garage online, enters the parking ticket number, amount to be paid, then identifies the company account number. The parker then merely inserts their ticket into a machine on the way out of the facility. How great is that?

b Credit card usage, as a means of entering and exiting a parking facility plus the means of payment, will be the dominant format of collecting revenues in years to come. Credit cards are simple, fast, and accurate - meaning handling of the cash becomes a non-issue for the operator.

c Clients can now easily reserve a parking space for a time and place in the future, thereby guaranteeing a space they're willing to pay extra for - a win-win for everyone. These clients will access your website, pay by credit card and print a bar-coded ticket on their home printer to allow them entry on the time and date they chose.

d The internet now affords the parking manager access to their parking system to view records and files from remote locations, as if they were on premises via laptop or PDA. Parking equipment by the more advanced manufacturers is IP-addressable. This enables the system processor to look at individual equipment from afar.

e The web will not only allow people to obtain better parking services, but they will be able to pay all their parking-related bills and review their historical information at a glance.

Cell phone technology is modifying our lives in so many ways. Cell phones and PDAs are increasingly adding services and conveniences for their clients in all sorts of parking applications.

advance, pay parking bills, print their own tickets from home, seek information about their parking history, or look for available spaces in a facility from anywhere they log in. Day-passes and monthly passes are now preprogrammed months in advance for specific upcoming events. Hotels, malls and universities all want to integrate their existing POS units to handle parking seamlessly. This trend is becoming increasingly common.

Cell phone technology is modifying our lives in so many ways. Cell phones and PDAs are increasingly adding services and conveniences for their clients in all sorts of parking applications. We have seen increased phone use for both on-street and off-street parking. For years now, vehicles in violation get their tires booted, but now can use a cell phone to access the number where instructions to remove the boot after paying the fine by phone are issued. Cell phones will become increasingly important as new applications are developed for our parking industry. Today's on-street industry is using cell phones to hold and pay for a space rather than using conventional parking meters, impacting off-street parking as well.

Also on the horizon is the introduction "Near Field Communications" (NFC). This new chip, already inside many cell phones throughout Europe, allows for information to be transmitted and received along short distances. Some parking systems are already set up to allow customers to wave a phone by a parking column or security door to gain access. The phone now becomes the pass. You'll be seeing NFC applications in parking lots in the next few years.

Another trend is the conscious decision to reduce labor costs. As stated earlier, prior to the turn of the century labor was relatively cheap. But today, next to lighting, labor is the most significant cost, so expect to see an increase in automation in parking structures. The "walking attendant" or "facility captain" can now oversee several parking structures simultaneously and is able to monitor and control lanes via cell phone or PDA. In addition, central control centers which monitor facilities across the state or province are emerging. These centers will be able to do anything an operator can do now from the remote office. Even more attractive is how they will be able to consolidate all of their reports, irrespective of different equipment manufacturers involved.

Given the power of pay-on-foot (POF) currently used in parking structures, it's only a matter of time before POF equipment will be linked to the internet. Soon, clients will not only be able to pay for parking, but will access multiple sites to buy services or look up data. Operators will be providing these new services to entice parkers.

In closing, here is another thought to consider. Over this century we'll see many changes in the automotive industry, including the use of individual vehicle identifications. Similar to long distance AVI tags used now in parking, these are already used on assembly lines to coordinate the vehicle with the sub-assemblies for the robots that attach the parts, and are then removed at the end of the line for reuse.

As this technology improves and costs come down, all cars will be equipped with their own individual RFID. This will enable the police to ID cars on the fly and will likely affect how you and I park our cars when entering a parking structure.

There will come a time when gates and tickets may no longer be needed to control vehicles entering the parking facility. While we are at it, who needs payment stations or cashier booths if we can all be billed instantaneously and automatically on entry? What wonders we will see in coming years? ■