

Digital Menu Boards

A guide from Digital Signage Today, Fast Casual and QSRWeb



INSIDE: Restaurant owners are finding digital menu boards as a way to draw traffic and improve customer experience.

EAST CASUAL

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About the sponsor

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Digital Signage Today, operated by Louisville, Ky.-based NetWorld Alliance, is the leading online publisher of news and information on the emerging world of digital signage, dynamic messaging and cutting-edge business communication technologies. The content, which is updated every business day and read by professionals around the world, is provided free of charge to readers.

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Fast Casual and QSRWeb are leading information providers about the fast-casual and quick-serve restaurant industries and the trends leading their growth. Devoted to publishing fresh, informative, original news and in-depth articles centered on their respective industries, both portals are designed to keep readers in the know. Our content is updated every business day, is free to site visitors and read by industry professionals worldwide.

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Introduction

While researching menu boards, I heard a sales director say, “The menu board is the most important part of the quick-service restaurant.” Now, that may be stretching a bit because if the food is bad, people generally won’t come back. But you could rephrase that and say “The menu board is the most important communication tool in the quick-service restaurant,” and it would be a more accurate statement.

As traditional in-store marketing is now being converted into dynamic digital signage, the same trend is being seen in the restaurant industry with the use of digital menu boards. Instead of traditional backlit boards that require employees to slide plastic inserts on tracks and manually rotate breakfast and lunch menus, digital menu boards allow restaurateurs to effectively day-part and adjust prices remotely. Customers are greeted with intriguing, engaging dynamic content, which in turn should result in more food being sold – and more repeat business.

ADFLOW Networks is one of the leading digital signage network integrators and already has experience in developing in-restaurant menu boards and digital signage. Some of the company’s projects with restaurants like Michel’s Baguettes and retailers like Office Max are chronicled here.

Like literature for a college class, this guide includes two sections called

Digital Menu Boards 101 and 201.

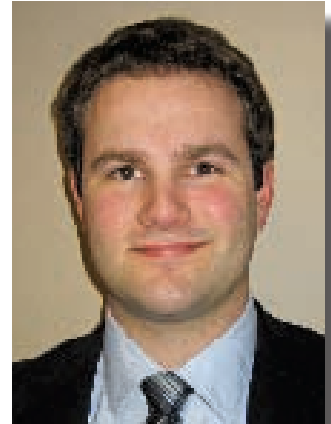
DMB 101 will help those on the entry level of a digital menu board deployment understand the basics of digital signage and its use as a menu board. Issues such as resolution, media players, connectivity and hardware considerations are discussed.

For those more familiar with digital signage, **DMB 201** takes a look at the content that runs on digital menu boards and the content management systems that power them. This chapter also features an article on graphic design and color effect on the psychology of the customer. In addition, the section touches on the future of digital menu boards, which will feature the integration of POS systems with digital menu boards.

Another section takes a look at best practices for mounting digital signage, from placement planning to choosing the right kind of mounting hardware.

The future is bright for this segment of the digital signage industry. Digital menu boards and restaurant digital signage are still in their early stages, and from this point on, the possibilities for new solutions that feature this exciting technology are seemingly endless.

We would like to thank ADFLOW Networks, whose sponsorship of this guide enables us to provide it to you at no charge.



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Today

Chapter 1: The digital menu board – why now?

It used to be that chalkboards were the only type of menu boards found in restaurants. For restaurateurs, chalkboards were easy to maintain, made it easy to change menu items and were relatively inexpensive.

On the other hand, they were also very bland.

As the idea of quick and inexpensive meals gained national appeal, quick-serve restaurants became more and more prominent. Many QSRs were franchised, and it became the job of the franchisees to drive traffic to their stores. As the sector began to add different types of food offerings, the restaurants became involved in a business battle for consumer attention in the fast-food sector. Menu boards were an important weapon in the arsenal.

Menu boards got a much-needed upgrade from their chalk ancestors when restaurant owners and parent companies began to focus more on the atmosphere and décor of their establishments. Atmosphere became a selling point to distinguish one burger joint from another, and so did consistency. With the menu board being the immediate center of attention in most fast-food restaurants, it wasn't long until the design of the board became just as important as the type of tile on the floor or pictures on the wall.

At the time, menu boards also assumed a dual role: an informational guide and a marketing tool. Because a menu board is almost guaranteed to be looked at by all patrons of the restaurant, advertising space on the board is a commodity. Beverage companies often brand the menu boards of fast-food restaurants, placing their names and logos prominently on them as part of a marketing agreement.

Most menu boards that evolved from the movement were large plastic ones that were placed on walls in groups of three or four, called panels. They were built with tracks where employees could insert slides with the food information on them. From there, electronic backlit signs and fluorescent bulbs were introduced to draw more attention to the board.

In the 1990s, in an effort to increase the average sale to each customer, combos became a standard way of pricing meals, with restaurants offering discounts on items purchased together. For menu board manufacturers, combos required more space to list their items and show pictures of the items, to generate higher combo sales.

QSRs have become more aware that visual appeal results in more sales and, as a result, have included many more pictures on their menu boards. The increase in pictures

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meant a decrease in space for other items. These space restrictions and increased offerings have opened the door for a new type of customer communication tool: the digital menu board.

When digital signage first became an option for retailers and marketers, it didn't appear in restaurants right away. Until recently, it has been rare to see a digital menu board system in deployment.

"In the past, digital menus boards were very cost-prohibitive," said Mike Abbott, vice president of ADFLOW Networks. "Networks hadn't been established and the signs couldn't be controlled remotely.

Today is different. Digital signage has made its way into many high-end

retail and restaurant applications and is breaking into all levels of establishments, from clubs and sports bars to franchised quick-service restaurants.

In large part, the growth of menu boards reflects more advantageous prices.

Price points for flat screens have gone down greatly in the past several years and show signs of falling even further. Although commercial-grade screens, such as those used in digital menu board systems, still remain more expensive than consumer-grade screens, the ability to run them 24/7 ends up benefiting the purchaser in the long run. And prices of commercial-grade screens are dropping in parallel with those of consumer-grade displays.

Advantages of a digital menu board network

Remote management

A digital menu board network can be controlled from one central location. This means that employees no longer have to manually change menu boards for dayparts and a network of thousands of menu boards can be controlled by one person.

Easy price and item changes

With many digital menu boards on one network, price updates, menu item changes and promotional content can be changed instantaneously with one mouse click.

The ability to feature more products

Since digital menu boards run dynamic content, they offer infinite possibilities to add or subtract menu items without having to alter a backlit menu board. They also allow dayparting of menus so restaurants can easily customize their menus for breakfast, lunch and dinner.

Chapter 2: Digital Menu Boards 101

Movement toward digital

Digital signage is one of the fastest-growing retail applications and is finding its way into many customer-related industries. For the fast-food industry, digital signage has impacted two separate yet very similar facets: digital menu boards and dining-area digital signage. Both contribute to the sales and promotion of new and existing menu items and are designed to drive traffic, sell promotional items and boost customer satisfaction.

Digital menu boards are emerging as one of the biggest opportunities to incorporate digital signage into restaurants. One benefit of having digital menu boards is that they overcome the space and item change limitations of standard backlit boards. Digital menu boards essentially have an infinite amount of space, because the content can change multiple times while the customer is making his food selections.

By definition, a digital sign is a flat screen that is connected to a network. Digital menu boards are likewise connected to an in-store network that can either be operated on-site or remotely. Remote connectivity eliminates the need for employees to manually change the signs. As QSRs and fast-casual restaurants further integrate digital signs into their systems, the on-site employees won't

An opportunity for digital menu boards

In December, New York City's Board of Health ordered restaurants there to come up with a standardized way to inform customers of the number of calories in fast-food meals. A law was created that required restaurants to put the calorie counts of their items next to the prices on their menu boards. The calorie counts must also be in the same type size as the name of the item and the price.

The law went into effect July 1, 2007, and is only applicable to restaurants that serve standardized portions and display calorie counts already, such as on posters within the restaurant or on the food packaging. For those restaurants, the calorie counts must be displayed on their menus and menu boards. This affects about 10 percent of restaurants in New York City.

As one can imagine, restaurants are opposed to this law. The Board of Health won't begin issuing fines for the law until October 2007, but at the time of publication, some major chain restaurants have publicly announced that they will not abide by this law.

Targeted restaurants say adding all the numbers to the menu board will make it impossible to read.

"You'll either have to have a Times Square-sized menu board, or it could look like a bad day at the eye doctor's office," said Jack Whipple, president of the National Council of Chain Restaurants, in an Associated Press story.

A solution to this problem lies in digital menu boards, which have the ability to display more menu options than traditional static boards. If the law requires the calorie counts to be as large as the name and price, then we may see more restaurants taking advantage of the additional space that digital menu boards provide. By utilizing dynamic content, space becomes less of an issue.

"These QSRs are struggling to fit all of their content on their menu boards anyway, if they don't switch to digital, they'll have a big mess on their hands," said Scott Koller, vice president of sales and marketing for Wireless Ronin Technologies.

It is unclear right now whether this law will stand or if it will spread across the country, but if either of those happen, it could mean good things for the digital menu board industry.

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have to deal with menu content at all, as it will all be controlled digitally from a central location.

So why doesn't every restaurant have these new boards already? One factor outweighs the others: cost. Most menu boards are made up of five or six panels. Some operators expect to use the same amount of flat screen monitors, which can be very expensive. Hybrid menu boards, a combination of fixed and digital panels, are a more affordable and practical solution.

Doug Watson is regional vice president for Mainstreet Menu Systems, a manufacturer that creates digital menu boards. He said the best and most effective digital menu boards are hybrid systems where one or two of the panels are digital and the rest are fixed.

"On these boards, the digital panels serve as advertising, while the others remain informational," Watson said. "This way, the customer isn't overwhelmed with five moving digital signs and confused on where to look."

Hybrid systems could very well be an intermediate step for restaurants that will convert completely to digital in the future.

Another reason is that, although consumer flat screens run in the neighborhood of \$1,500, commercial-grade screens are quite a bit more.

They are made from heavier-grade materials and must have more hours to their life, as they are normally left on all day.

Couple that with installation, mounting, content development and integration prices and it is understandable why the local McDonald's doesn't have an integrated digital signage network yet.

Hardware considerations: Consumer- vs. commercial-grade screens

For digital signage experts, it may sound crazy to think that someone would consider walking into a Best Buy and purchasing a flat screen for digital menu board use. On the other hand, some readers are probably asking, "Well, why not?"

Not all flat screens are made the same. Aside from LCD and plasma, the biggest dichotomies of digital signage hardware is between consumer- and commercial-grade flat screens.

Commercial-grade screens are the standard for digital menu board applications and most other digital signage deployments. Commercial-grade screens are designed for far more continuous use than a screen you would put in your home. Consumer-grade screens have fewer hours of life expectancy, usually in the tens of thousands. Generally, it is assumed by the manufacturer that consumer

Commercial vs. consumer flat screens	
Commercial	Consumer
Designed for continuous use	Manufacturers warranty limited if used for menu board applications
Can be used in portrait or landscape mode	Connect only to DVD players and cable
Networking inputs (PC, serial ports, VGA)	Shorter lifespan than commercial grade
The right choice for menu board deployments	

screens will be on only for several hours a day.

On that same note, it is not uncommon to have a commercial-grade screen that is left on 24/7. Consider also that many quick-service restaurants sometimes open at 6 or 7 a.m. and close at midnight or 1 a.m. For these restaurants, the menu boards must have enough life to operate for 18-20 hours per day.

With many consumer-grade screens, the manufacturers warranty can be very limited or even voided if the screens are used for a commercial application such as menu boards.

Aside from lifespan and warranty considerations, commercial-grade

screens can be oriented in portrait mode and landscape mode, where consumer grade screens often cannot. We touched on connectivity earlier, and commercial-grade screens provide hook-ups and inputs that consumer-grade screens don't have. Commercial-grade screens have PC inputs, serial ports and VGA inputs that are used for connecting them to networks and media players. Consumer-grade flat screens are designed to connect with DVD players, video-game systems and cable line only.

Screen brightness

As the price point drops, the overall quality of picture continues to go up, as does the ease of using high-

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definition resolutions in flat screens. Especially in restaurants, which are usually outfitted with lots of windows, dealing with ambient light has been a challenge in the past for deployers of digital menu boards. Ambient light, such as sunlight and light emitted from indoor fluorescents, makes LCD and plasma screens hard to read.

OEMs of flat screens have begun making their screens brighter in LCD and plasma models, making them less vulnerable to glare. The technology is similar to that of touchscreens in outdoor kiosks, which operate at a much lighter brightness level so they can be read any time of day.

The definition of digital signage is flat screens that operate on a network and can be changed from a remote location. It is this network connectivity and instant-change ability that separates a “digital sign” from a “flat-screen TV.”

Connectivity

With the biggest benefits stemming from remote management and networking, digital signage networks have taken off in the past five years largely due to the increased use of broadband Internet and now Wi-Fi access. In the past, it would have been difficult to access and manage large digital signage networks because of the slow speed and unreliability of dial-up Internet. The connections

were volatile because they were analog and ran through existing landline phone wires. A dropped call is frustrating, but translated into the digital signage realm, a dropped call would mean downtime for the digital signage network.

Most Internet connections now are high-speed broadband. This signal is digital and is normally connected through cable instead of phone lines. Broadband is always on and requires no dial-up, making it ideal for use for digital signage networks designed for 24/7 operability.

Broadband connectivity is also a major player in the spread of digital menu board networks and the like because it allows these networks to be set up anywhere. Whereas before phone lines had to be run to dial-up modems to receive an Internet signal, broadband has opened the doors to wireless connectivity options.

Wi-Fi signal broadcasting is one such option that is particularly useful for restaurants and QSRs that operate their digital menu board systems from a PC within the restaurant. Wi-Fi uses a router to send the same high-speed broadband signal the computer is receiving from the cable to all receptors within a given area. With most commercial-grade routers, the signal has no trouble reaching all screens within the restaurant.

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For more remote deployments, such as multi-restaurant applications where all the menu boards are being controlled through a central remote source, cellular connectivity is an option. Cellular Internet connectivity operates on the same digital network as cell phones do. It is the same technology that allows customers of Sprint, Verizon, etc., to access the Internet remotely on laptops using special wireless cards.

Making a resolution

Another advantage of flat screens is, even as the price point drops, the resolution of the screens continues to become sharper. At this juncture, standard TV operates at 480p, which means a vertical resolution of 480 vertical scanning lines on the screen, usually with a horizontal resolution of 704 or 720 pixels and 4:3 aspect ratio on standard-definition television (SDTV). The “p” indicates progressive scan, where the lines of each frame are drawn in sequence.

Commercial-grade flat screens used for digital menu boards are now offered in resolutions up to 1080i, the standard resolution for HDTV. This means now there are 1080 lines of vertical resolution. The letter “i” stands for interlaced, also known as non-progressive scan. 1080i usually means the widescreen has an aspect ratio of 16:9, and a horizontal resolution of 1920 pixels and a frame

resolution of 1920 by 1080 or about 2.1 million pixels.

The high-definition advantage to the digital menu board deployer is the same as that for an at-home DVD fanatic: better picture. The ability to run content in high-def enhances content by giving it a brighter, sharper picture. Incidentally, high definition and the 1080i resolution is working its way to the standard for all broadcast television.

Brad Fairman, vice president of sales for Audio/Video Interactive, said that by 2010 all major networks will be broadcasting their entire signal in high definition. 1080i digital menu boards are one step ahead of the game.

Media players: A digital menu board’s engine

Sharp clean lines. Bright LCD lights. Lightweight and easy to handle. In case you’re wondering, that’s the description of a high-def menu board, not a Mercedes-Benz Roadster. The Roadster and the digital menu board do have one thing in common, though: they both require a high-performance engine to operate at peak performance.

Media player is just a fancy term for high-powered PC. Often, media players can be embedded inside an existing PC. They are simply the

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mechanism that drives and supports the content seen on the menu boards and other digital signage.

Media players are equipped with high-end video cards that store and run content. Although the concept for media player seems simple, they can differ greatly. For example, some may run on Linux while others run on Microsoft Windows XP or XP-Embedded. There is also a difference between solid-state players and those with rotating disk drives. Media players with rotating disk drives require the use of internal fans and must be used in ventilated areas. Consequently, some in the industry consider them to be less reliable than solid state players with no moving parts.

When deciding on a media player to use in a digital menu board deployment, Fairman said to ask yourself the question: “What will it do tomorrow?”

“Don’t be afraid to ask questions about the media player’s performance in the future,” he said. “The technology is always changing, so you want to make sure you have adequate performance to handle applications that may come around several years from now.”

Second, Fairman said the deployer must know his application before trying to put together a menu board system, or any digital signage system for that matter.

“A lot of people come into the game too early and only know that they want digital signage, but they still haven’t decided how they want it to work for them yet,” Fairman said.

Another consideration many solutions providers are faced with is how many media players should be present on their network. Consider a digital menu board deployment for a fast-casual restaurant. In this scenario, there are two possible solutions, both with advantages and disadvantages.

One option is to run all of the screens off of one central computer containing one media player. In this instance, the media player would contain several different video cards that would run different content onto the separate menu boards.

In this option, deployers only have worry about the service, repairs, maintenance and uptime of one computer and one mother board. Many media players in this type of deployment have dual processors for extra power, extra RAM for faster performance and a large hard drive for storage space.

This option seems to be the most popular choice for menu board deployments presently. There is a disadvantage, however. One motherboard, one media player, one computer. This means that one problem with that unit can jeopardize the performance

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of the entire restaurant's network. If the main PC happened to go down or freeze up, as PCs have a tendency to do, then the digital menu board would either be stuck on one screen or wouldn't show up at all.

The second option is a solution to that problem, but is not a perfect resort in and of itself. By having multiple computers with multiple media players, there are more points

for failure but a better chance of uptime if one happens to go down. If a player or PC freezes, some screens in the restaurant still are active. If the main digital menu board goes down, content can be routed to the other screens so there is no real downtime where the customer cannot access the information.

One central media player or several remote ones?

One media player for the restaurant network

Advantage: Deployers only have to worry about one possible point of failure making the network easier to manage.

Disadvantage: If the one computer goes down or freezes, the entire network is in stalemate.

Multiple media players in the restaurant

Advantage: If one media player goes down, others around the restaurant can still narrowcast the content.

Disadvantage: More points of failure can mean more service and maintenance calls.

Chapter 3: Case studies

Office Max

Digital menu boards don't necessarily have to be part of a restaurant. After all, a menu is simply a list of offerings and options, and is not necessarily exclusive to food.



ADFLOW's 40-inch LCD menuboards are being deployed in all large-format Office Max stores across the U.S.

In Office Max's case, the company's digital menu board deployment was a digital signage solution that was placed in the copy and reprographics area of the store. The solution included a digital menu board that showed the list of options for copies, bindery and other services.

Office Max is one of the leading retailers of office products. It has more than \$8 billion in sales and more than 1,000 big-box retail stores. It also has more than 40,000 employees and offer more than 25,000 products. Office Max's main customer base is small to mid-size businesses, although it has enterprise-level customers, as well.

Office Max uses ADFLOW digital menu boards to inform and entertain customers

OPPORTUNITY

To provide Office Max's new large-format stores with a high-impact digital menu board and signage solution that enhances the customer shopping experience.

SOLUTION

ADFLOW used its Dynamic Messaging System to manage and distribute content to 40-inch LCD panels that also featured a directional sound system and live TV satellite feeds from CNN.

RESULT

A more effective means of engaging and entertaining in-store consumers and an opportunity to enhance the Office Max brand.

CHAPTER 3: Case studies

Office Max wanted to take full advantage of digital signage to impact its customer base and had the same goals as many other retailers: boost sales, drive more traffic and drive more sales to promotional products. The company also saw in-store signage as a way to enhance customer experience with informational narrowcasts. Having in-store digital signage was also a way to drive the Office Max brand to customers.



Digital menu boards don't have to be in a restaurant. Office Max's digital menu board deployment was a digital signage solution placed in the copy and reprographics area of the store.

Office Max tapped ADFLOW Networks and its Dynamic Messaging System, which in this case served two purposes.

First, ADFLOW's network serves as the digital menu system for customers in the copy area. By running content on a flat screen that is changeable through a PC, Office Max employees can instantly adjust the price of copies and highlight new promotions. The software also runs scheduled

copy promotions and can easily be changed to target the unique demographic of each store.

ADFLOW's seventh-generation Dynamic Messaging System uses the Matrox Graphics Millennium P650 graphics card to power the content on the digital menu boards.

Each Office Max Advantage store features a large menu board enclosure branded with the Office Max logo. The enclosure houses two 40-inch LCD panel screens. The screens and the enclosure are positioned over the counter of the copy area much like digital menu boards in a restaurant would be.

As for the second purpose, the digital menu board network serves as an information source for customers working in the reprographics area or waiting in line. The second screen broadcasts a live CNN TV satellite feed and uses directional sound technology to narrowcast to those waiting in line, but not disturb other shoppers.

More than 100 Office Max locations have incorporated the digital signage solution into their stores with several hundred more locations planned for 2007-2008.

CHAPTER 3: Case studies

Michel's Baguette

Moving to the restaurant sector, ADFLOW installed a digital menu board system at Michel's Baguette, an upscale fast-casual deli chain. Michel's locations are typically in food courts and transit locations and are designed for busy, on-the-go commuters interested in fast, healthy meals.



ADFLOW's Dynamic Messaging System in deployment at Canada-based Michel's Baguette.

In food courts, customers are bombarded with options. For example, some large mall food courts can have up to 15 restaurants in the food court area. Michel's challenge was to improve its small retail footprint and drive more traffic to the restaurant. Like other deployers of menu boards, the restaurant also wanted to enhance customer dining experience and build customer loyalty.

ADFLOW's signage project replaced the static in-store signage with large LCD screens. The screens were strategically placed at the entrance of the restaurant. The content featured an array of tempting selections, from steaming bowls of French onion soup to chocolate-encrusted croissants delicately topped with powdered icing sugar. The Michel's project works two-fold: It captures the attention of passers-by and also serves as a digital menu board, informing the customers of new and current menu items.



One of Michel's Baguette's goals for its digital menu board network was to drive more traffic.



Digital menu boards, like this one at Michel's Baguette, can attract customers as well as inform them.

CHAPTER 3: Case studies

Being a restaurant that serves breakfast and lunch at different times of day, Michel's Baguette took advantage of the flexibility of the menu boards to do dayparting. For example, coffee and breakfast items playing in the mornings would be replaced by sandwiches and soups for the lunch-hour traffic. By dayparting, the odds of increasing product sales (through a higher conversion rate) went up substantially because of the use of digital menu boards.

Michel's focuses on enhancing customer experience through store atmosphere. In the past, it has spent more than \$6,000 on wallpaper for its restaurants with a goal to enhance customer experience.

"The investment in digital menu boards for less money has had a bigger impact from a consumer feedback and staff perspective," said Wayne Ruttle, vice president of sales for ADFLOW Networks.

Alice Fazooli's

Alice Fazooli's Italian Grill also used ADFLOW's DMS for a digital signage deployment in one of its restaurants. Owned by Canadian restaurant brand SirCORP, Alice Fazooli's is an upscale casual Italian restaurant chain with locations across the country.



It is essential to make digital menu boards fit the look and feel of the restaurant. Pictured: Alice Fazooli's restaurant.

ADFLOW worked with SirCORP to come up with a strategy for an in-store digital signage solution to broadcast sporting events, etc., but also use the digital signage to make a significant contribution to the atmosphere of the restaurant. The restaurant has a bar/lounge, but it wanted to broadcast sports without giving it the feel of a sports bar.

ADFLOW's solution was a video wall that spanned the back of the bar. The wall consists of 12 42-inch LCD screens that are arranged in a 1x12 format. The screens are visible from all parts of the restaurant.

CHAPTER 3: Case studies



ADFLOW's restaurant digital signage deployment at Alice Fazooli's featured 12 screens with content that spanned all the screens.

ADFLOW supplied a video-splitting technology that enables each screen to be individually controlled to broadcast sports or other live television. To add to the atmosphere, ADFLOW partnered with Artisan Live to create content that could span all 12 screens. For example, one piece of content that runs at Alice Fazooli's makes the screens look like an aquarium and features a shark and whale that can swim from one side of the bar to the other.

Chapter 4: Making digital menu boards part of the restaurant design

It is extremely important to have digital menu boards integrated as much as possible with the overall look and feel of the restaurant, said Wayne Ruttle, vice president of sales for ADFLOW Networks. This accomplishes two goals for the restaurant.

First, it improves the atmosphere and appeal of the inside of the building. By having the menu boards and their content “match” the décor of the restaurant, it makes them seem less out of place and more like an intended part of the atmosphere rather than an add-on.

“We’ve seen retailers and restaurateurs alike hang a screen in the corner behind the counter and it sticks out like a sore thumb,” Ruttle said.

Second, menu boards are an opportunity for restaurants to drive their brand. Content shown on the screen, whether it is a menu or a promotional spot, should match the color and design of the restaurant brand or the interior of the restaurant. We will discuss the impact of color and design on customer psychology in Digital Menu Boards 201.

“One of the biggest customer influencers in a restaurant is its environment,” ADFLOW founder and president David Roscoe said. “I can’t think of a better environment for influencing customer behavior than a restaurant that is showing an enticing photo

of a product that I want to eat and being able to order it right there.”

Digital menu boards target audiences in an incredibly specific way. The customers are already in the restaurant and have already decided that they are going to buy food there. Therefore, the promotional space on the digital menu board is better spent by further driving the brand to the customer.

Also, digital menus can assist in upselling, which is getting the customer to “super size” his meal or buy dessert, for example. QSR operators have trained their employees for years to upsell but getting them to follow through consistently and effectively has always been, and continues to be, a big challenge. “Why not let digital menu boards do the upselling that the employees aren’t?” Roscoe said.

Chapter 5: Digital Menu Boards 201 – The Content

Content development and selection was touched on earlier, where we discussed using digital menu boards to drive the brand of the restaurant. We also discussed using digital menus as tools to promote upselling.

Each company is different, so the basic rule of thumb behind deciding on content for digital menu boards is to use them to promote the key business objectives or drivers for the company. This, of course, is for content that runs in addition to the menu offerings.

If the key driver for the restaurant is to promote certain high-margin products, pictures or footage of those products need to be integrated into the playlist. Again, if one of the business objectives is upselling, this should be one of the main focuses.

The content can also depend on non-business factors, such as the weather. If it is hot outside, offer something that will cool people off, such as cold drinks or ice cream. The advantage to operating a digital menu board network is that this type of content can be easily changed to accommodate the weather conditions, time of day or type of customer demographic.

Research and results: The psychology of in-restaurant media

Editor's note: This chapter is excerpted from "Digital Signage Networks: Theory, Psychology and Strategy" by Pixel Inspiration, and reprinted with kind permission.

Part 1: Perception

When information is presented on a display, the most basic level at which psychological factors will come into play is at the level of perception. If the information cannot be seen or heard, then it will have no chance whatsoever to influence behavior. Thus, as a gatekeeper of sorts, the human perceptual systems will filter out certain bits of information and highlight others. Within the area of visual perception, some of the most relevant aspects of a visual display are color, form and motion.

Form

Information presented on a digital display device will often consist of shapes, texts and other "forms." Thus, an understanding of these issues is relevant for digital signage content creation. Within the scientific literature, most research about form has been aimed at understanding issues such as form perception and grouping. Within the non-academic literature, numerous observational data have been presented. The

Chapter 5: Digital Menu Boards 201 – The Content

findings most relevant for digital sign networks are presented below.

Font issues

Although much of the research has been informal and not truly scientific, the advance of the Internet and human computer interface (HCI) work has led to a great deal of informal recommendations around fonts. The following tables, drawn from numerous sources online and offline, summarize some of the relevant findings.

Psychological impact of the fonts themselves:

- Thin fonts: spirituality, simplicity, honor
- Thick fonts: materialism, self-confidence, strong-willed, dominant
- Even spacing: reliability, toughness
- Rounded fonts: sensual, playful, effervescent
- Compressed fonts: exclusiveness, reserved, intense
- Large fonts: friendliness, fun, friendly

Motion

Motion perception is one of the most basic features of any visual system. For example, while it is possible to find creatures with visual systems lacking color perception or depth perception, to date no visual system lacks motion perception. This is likely because of the valuable information buried in motion perception.

Motion can alert us to dangers in our environment, can help distinguish a figure from its background (camouflage) and can help perceive depth. Because of its evolutionary value, motion also has the ability to capture attention.

Intuitively, it seems that a moving target serves to capture attention. However, recent research (Abrams and Christ, 2003) has suggested that motion per se does not capture attention – instead, it is the onset or appearance of motion that actually captures attention. For example, these authors found that moving items were no more attended than static ones. But, items that recently started to move captured attention. This suggests that content creators should be less concerned with motion and instead spend time considering how to have a great deal of motion onsets. In fact, this suggests that too much motion can actually be a bad thing (in terms of attention capture).

Part 2: Attention

Although everyone knows (intuitively) what attention is, after 50 years of intense research, its definition and properties still remain much of a mystery. Several of the most relevant aspects of attention are presented below.

Capture of attention

As discussed above, the appearance of motion can capture one's attention.

Surprisingly, recent research has suggested that the appearance of a new object is not sufficient to capture attention. Other work shows that flashing/flickering images are not successful at capturing attention for extended periods – and that such flicker can be relatively well filtered out. Dozens of studies have revealed other aspects of attentional capture. The following table summarizes the aspects of attentional capture most relevant for digital signage.

Attention can be capture by:

- Motion onset
- Luminance/brightness changes
- Color changes (only if dramatic)
- Faces – particularly emotional, famous or relevant ones
- Unique things (e.g., a red thing on a field of green things)

- “Task-relevant” things (e.g., if looking for a teapot, silver items will capture attention)
- “Resonant” items (emotionally, task-wise, etc.)

When creating content for digital signage, a company should first decide whether it wishes to capture attention. In some cases, for example, when creating ambiance, it might be desirable to remain “un-attended.” If attentional capture is desired, the specific goal of that capture should also be considered. For example, if the goal is to warn the viewers, then any “trick” might suffice to capture attention.

However, if the goal is to perform a gentle soft-sell (or provide a reminder), then a subtle attentional capture might be more appropriate. Of course, the overall artistic/creative nature of the content must also constrain or indeed develop from the choice of technique.

Time perception and attention

Recent research has shown that attention and time perception are intimately linked. For example, if an event (e.g., an image on a display screen) captures one's attention, then that event will seem to last longer. At the same time that the visual event “slows down,” the rest of one's surroundings will seem to “speed up.” This is likely related to the finding that digital signage networks decrease

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perceived wait time: the on-screen activity makes screen-time slow down while world-time speeds up.

Part 3: Memory

Whether a digital signage network is used to advertise, brand, create moods, build loyalty or merely inform, the ability to get information into the memory of people who see a display device – and have information “pulled” from memory – is critical for success. If digital signage content cannot create memories (or cause memories to come to the surface), then the content will be merely wasted energy. Memory is one area of psychological research where literally thousands of studies have been done. This massive body of literature is difficult to synthesize and present. In addition, translating the findings into terms that make them relevant to digital signage presents another challenge. To organize some of this information and present it in a way that can guide digital signage content creation, we have decided to make the primary “cut” of this space along the lines of different types of memories.

The actual way that something moves from working memory into long-term memory remains a mystery. However,

it is clear that certain types of information have a far greater chance of making it into the long-term memory system. The box below presents a list of these specific features. In the context of digital signage media, it is important to try and “hit” as many of these aspects as possible. Importantly, these should be kept in mind whether one is trying to create new memories or (as is often the goal) call up already existing memories (for example, to modify them, use them to create new memories, draw attention to something or change behavior).

Memorable digital signage information is:

- *Relevant*
- *Emotional*
- *Multi-sensory*
- *Varied*
- *Attention-grabbing*
- *Credible*
- *Timely*
- *Repeated*
- *Engaging*

Part 4: Emotion, preference and liking

It is well established in the psychological literature that events that trigger emotional response are encoded more easily and more deeply within memory. Of course, one goal of digital signage is to make information more memorable. Given this, those crafting digital signage content are well-advised to understand the role of emotion in memory formation. Additionally, some is known about automatic emotion generation and creation. We first turn our attention to these automatic effects and subsequently look at the interaction between emotion/mood and memory.

Mere exposure effect

“Mere exposure effect” refers to the phenomenon that mere exposure to an image produces increased liking, even when one is not consciously aware of that exposure. Zajonc and colleagues (Zajonc, 1968) demonstrated this phenomenon in numerous experiments. In such an experiment, the testers would repeatedly expose people to a random word or image. But the exposure was entirely passive and was so brief (less than 25 milliseconds) that it never reached conscious awareness – in other words, it was subliminal. After such exposures, testers would typically find an unexpected preference for the previously presented items.

Currently, there are two popular explanations for this phenomenon. First, it might be due to a form of associative learning, whereby things that are experienced without any concurrent negative consequences become more liked. A more likely explanation is that prior perceptual experience allows an automatic “fluency” in neural processing – when the object is subsequently encountered, it is more easily processed and thus perceived (perhaps subconsciously again) as somehow familiar. Such familiarity is then associated with liking.

Although this phenomenon is well established, a series of recent studies reveals a possible “dark side” to the mere exposure effect – namely, in many cases, a “mere exposure” can actually lead to a dislike of an object. We discuss this next.

Distracter devaluation effect

In the classic mere-exposure literature, little mention was ever made of attention or task-demands. This is likely because in most early studies there was no talk whatsoever – that is, the exposure was passive. However, it turns out that having a task at hand adds a new wrinkle to the mere exposure effect. Specifically, if the task is such that the “merely exposed” item actually interferes with the performance of the task, then that item will subsequently become devalued (i.e. disliked). Hence the name – distracter devaluation effect.

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Peak-end effects

An additional phenomenon worth mentioning is the peak-end effect. When experiencing an event, it turns out that your retrospective assessment of that event will be weighed particularly heavily by the peak emotion experienced and the end emotion experienced. Similar effects are likely true for other aspects of cognition as well – for example, phenomena such as memory for events, affiliations with objects and overall preferences will be heavily weighed by the peak and end effects. Thus, in the context of digital signage, these results suggest that it might be sensible to have a digital screen near the exit – visible as the last (“end”) experience in the venue. Such a screen could, for example, be used to create a warm parting experience.

Emotion and memory

In general, psychologists have used several different approaches to study the emotional impact of events on memory. One has been to ask respondents to recall what happened to them on emotionally charged days (e.g., the day Kennedy was assassinated, or 9/11). A second approach has been to show people short videos (usually of crimes) and to ask them later to report events as they occurred in the video. Experiments using such approaches have generated abundant evidence showing that

emotional states at encoding appear to enhance memory.

Studies clearly show that emotional memories (at both encoding and retrieval) are indeed special: They are associated with distinct brain areas and processing routes not obviously used when information is non-emotional. Thus, in the context of digital signage, creating emotionally compelling content is one way to improve memory and increase motivation.

Choosing the right OS for your menu board network

A digital menu board network is a consumer-centric endeavor, which simply means that your customers will not really care what is going on behind the scenes, so long as it provides them with the right information. The customer viewing a screen does not care what software package is being used to deliver the media, and he certainly doesn't care whether it is running on Windows or Mac OS.

That said, the selection of software does go hand-in-hand with selection of an operating system, so it makes sense to keep the options in mind at the front end. If the best software package for your needs is written to run on Mac, that means you'll have to plan your hardware purchases accordingly – and you may have networking issues if your existing infrastructure runs Windows or UNIX.

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Here is a quick overview of the three major operating system options for digital menu board and restaurant digital signage networks, and their relative strengths and weaknesses.

Windows

The big hitter of operating systems, Windows boasts the largest installed base and support infrastructure. As a result it is the first choice for many developers.

“We’ve played around with a lot of different operating systems over the first 15 years of our operation,” said Doug Peter, president of St. Clair Interactive, which exclusively builds solutions on the Microsoft platform. “We made the decision to standardize on one, because we don’t believe you can be an expert on everything.”

Peter said the ability to communicate with legacy systems is key; otherwise, a new in-store technology turns into a “silo,” and therefore becomes a source of extra work and expense rather than a means to reducing those things. Windows, in his experience, does the best job of “middle-manning” all of the new connections that need to be made to get the project to work.

“Most clients have a huge variety of platforms in their enterprise, and what’s really essential is to find the middleware that will allow us to talk to all of them,” he said. “The fact of

life is 80 percent of retailers run Windows.”

Brian Ardinger, vice president of business development for Nanonation, said the primary advantage of Windows is its “ecosystem of peripheral devices,” a natural result of the product’s market share: More developers building more Windows systems for more clients means more devices will ultimately be supported.

And then you have the benefit to your employees, which is not insubstantial. The fact that practically every new PC ships with a copy of Windows already installed means that workers are used to interacting with Windows machines and won’t need much hand-holding, WireSpring Technologies president Bill Gerba said.

“The large installed base means that most people are comfortable with Windows metaphors for accomplishing various actions on screen,” he said. “And it also means that on-site technicians are likely to be somewhat familiar with the OS.”

That said, Windows is not without its weak spots – and chief among them is security. Security patches are a fact of life in Windows world; the Common Vulnerabilities and Exposures (CVE) database, which is funded by the U.S. Department of Homeland Security, lists 324 known vulnerabilities for Microsoft Windows.

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“It is the biggest target for virus and spyware and adware writers, as well as the most frequent target for hackers,” Gerba said. “Many vendors find it necessary to bundle extra anti-virus, anti-spyware and remote patch management software with the systems to mitigate the threats.”

This means that communications and physical security for the media player is of paramount importance when selecting, deploying and operating a digital menu board or signage network.

Mac OS X

The Macintosh operating system, like the hardware it exclusively runs on, has behind it a passionate legion of fans for whom nothing else will do. It has its fans among in-store technology developers, as well.

Sandy Nix, president of D2 Sales, said the Mac is an ideal platform for in-store media applications. “Stunningly reliable hardware performance, rich graphics and virtually no virus vulnerability.”

She points to a kiosk project D2 developed for Burger King, an entertainment device integrated into the playground area found in many BK locations. Designed to build brand loyalty by creating a positive association between the restaurant’s food and the touchscreen games, the colorful machines were developed on the Macintosh platform.

“There are units in the field that are eight years old and never had a service call,” she said. “We manage the help desk on those units, and even though there are hundreds of units still out there, the equipment up-time average is 99.99 percent and still going strong.”

Visually, Mac has a strong reputation, too.

“On the graphics side, Mac has some OS-level functionality that gives us a richer media experience,” Ardinger said. “What Mac OS X has done with their graphics system is pretty impressive.”

Nix said the primary drawback with OS X is not with the equipment, but the fact that relatively few OS X developers are creating applications and drivers for in-store media.

“Because there are few scalable, reliable applications, there are few deployments on Mac,” she said. “That low volume means the peripheral vendors often don’t write drivers for OS X. There won’t be more deployments until there are more software and peripherals, which won’t happen until there are more deployments – it’s a vicious circle.”

In the meantime, the Mac OS reigns as the content creation king, even if it gives way to other operating systems when it comes to managing and distributing content.

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Linux

The dark horse in this race is Linux, a name that has risen in the business consciousness in recent years, thanks to a growing understanding of the open-source movement.

Confusing the issue, though, is the fact that Linux isn't a particular "thing" – it's a type of thing that exists in an almost endless number of varieties.

Because Linux is released under the GNU General Public License (commonly abbreviated as GPL), any person or entity may take the source code, modify it as they see fit and redistribute it. As a result, several hundred different varieties of Linux are available.

Open-source software such as Linux is also undergoing constant tweaking and improvement by the army of volunteer programmers that work on it. New "builds" of the platform can be released as often as daily, which can be a major source of frustration for someone trying to develop an application that runs reliably. "The problem with Linux is, we're very dependent on media players," Peter said. "Every time Linux changes, you would have to go in and rewrite the device handlers."

But even with all these strikes against it, Linux has two very powerful words working in its favor: It's free. The same GPL that enables it to branch

into a myriad of different "distributions" specifies that it be made available at no charge. Just download an .ISO file, burn it to a CD-R and you're ready to install.

What about Vista?

Microsoft shipped its new operating system to consumers Jan. 30; the previous 27 months had seen an unprecedented beta-testing process in which hundreds of thousands of volunteers put the system through its paces. During the test period, more than 2.25 million copies of the beta were downloaded.

For in-store media, Vista represents some amazing new possibilities – with a few very important caveats. The operating system allows developers to create rich, interactive experiences that can scale to any size screen. But hardware requirements are steep, and deployers will have to weigh whether it is worth the upgrade for their projects.

Much of the attention Vista has received has focused on its new graphical interface, which is nothing short of amazing. The Windows Aero GUI represents the first time since the release of Windows 95 that the entire Windows user experience has been taken back to the drawing board – every aspect, from buttons to dialog boxes to icons to fonts, has been redesigned. The emphasis is on

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aesthetics, with liberal use of three-dimensional graphics, transparency and animation.

Aero comes with some steep hardware requirements, though. To take advantage of the new look and feel requires a processor running at least 1 GHz, 1 gigabyte of system RAM and a minimum of 128 megabytes of video RAM.

Mark Justice Hinton, author of “PC Magazine’s Windows Vista Solutions” (Wiley Publishing), said Vista is designed to run on most PCs sold in the last two years. However, users wanting to take advantage of the new graphic interface will need something very powerful.

He noted that Microsoft designates two different classes of Vista-ready PCs: “Vista Capable” and “Premium Ready.” The former has lower hardware requirements, but won’t be able to take advantage of the Aero interface.

The core of the Vista graphical experience is the Windows Presentation Foundation, which allows developers to easily manipulate video. Built-in processes make it possible to invert, rotate and dynamically size video elements and clips.

“A kiosk could have three video clips playing on the screen at one time,” wrote Microsoft retail technology strategy director Tim Gruver in

a whitepaper on Vista and kiosks.

“A user could then bring a particular video clip to the foreground as others remain in the background or switch between the video clips with a simple click. This means that multiple video clips can now be easily incorporated into kiosk applications to display product information.”

Perhaps more importantly, the WPF makes it possible to create elements that are “resolution-agnostic” – that is, they grow and shrink dynamically so they look good no matter what screen resolution they are displayed at. A new emphasis on vector graphics means images and elements can be greatly increased in size without pixelization – which holds great promise for large-format digital signage applications.

WPF also has ramifications for remote content management and updating. Applications can be posted to a Web server; clients who “subscribe” to the server will be automatically updated with the new application.

Chapter 6: Putting it on the wall

One of the more basic parts of a digital menu board deployment lies in the rawest piece of hardware in a network: the flat-screen mount. Although no electronics are involved, digital signage mounts are not to be taken lightly. They are carefully constructed to support weight limits and give deployers flexibility when mounting their flat screens.

Digital menu boards add this whole new realm of capability for restaurant signage, but they can require more placement planning than traditional menu boards. When installing a digital menu board network, first plan for placement and research mounting hardware then know how to power it.

Scout the restaurant space to determine the best opportunities and areas for placing menu boards. Dale Smith, director of business development for Peerless Industries, a digital signage mount manufacturer, calls this “screen spotting.” Smith warns that beautiful displays and all the high-powered content money can buy are wasted if the signs aren’t placed where customers can see them.

In menu board deployments, the new signage networks usually are placed where the existing menu boards were: either behind the cashier’s counter or near where the lines form. Either way, menu boards and digital

signage need to be placed in high-traffic areas where the content is easily viewable by all who enter the store. In addition, they must be accessible for service, replacement and updates.

Digital signage and promotional digital menu boards in entranceways provide the best opportunity to educate customers on products immediately upon entering the restaurant. Once inside, the menu boards become more effective wherever customers remain stationary for a moment, such as near check-out lines or dressing rooms.

Digital menu boards must be placed where they can be seen by customers easily and immediately, although this can sometime pose a challenge. Due to variations in ceiling heights and room arrangements, flat screens may not always fit in the ideal spot with conventional mounting hardware.

That’s why, after scouting the screen’s placement, the next step is to assess your space and determine whether standard products will work or if customized solutions are needed. Custom solutions are sometimes required for restaurants, as each individual location even within a franchised brand can be different, and network environments tend to impose what kinds of screens and mounts can be installed.

Chapter 7: Tips and best practices

The digital menu board solution is still a very new medium. At this juncture, very few companies have the ability to develop, integrate and deploy a digital menu board network, and even fewer of those have experience in doing so.

Wayne Ruttle, vice president of sales for ADFLOW Networks, said ADFLOW has had the luxury of being able to work with many digital menu board deployments and gain experience through those projects.

“We’ve had a chance to work the bugs out and get it right, and now we are in a position to share our experiences and expertise to dramatically reduce the learning curve and investment costs associated with deploying and managing these networks,” Ruttle said.

Ruttle’s advice is to choose a company to handle your digital menu board deployment as you would choose a company for any other merchandising service. Look for companies that identify with their clients and have the ability to customize solutions for them.

“At the end of the day, its not about the technology or the make or model of the display screen, its about identifying the client’s key business objectives and not treating a menu board deployment different than any other strategic marketing or merchandising

initiative within a store or venue,” Ruttle said. “Experience is invaluable.”

Jim Grosso is the principal of Gel Communications, a Canadian digital signage content development company. Grosso had previously worked for one of Canada’s largest grocery store chains and helped implement in-store video advertising.

“We found that stores that installed in-store screens for marketing saw huge incremental sales after the deployments,” Grosso said.

That was more than 10 years ago, before flat screens were invented and before digital signage even existed. As digital signage has begun to take shape as an industry, Grosso has used his in-store signage experience to develop Gel Communications.

Whether the deployment is digital menu boards or other digital signage, Grosso said there are three keys to developing content.

First, the digital signage content must be consistent with the environment it is deployed in. For example, digital menu boards deployed in a KFC restaurant must have content that is red and white in nature, matching the theme of the restaurant. The KFC brand must also be highly prominent; the screen should show the name and logo of the restaurant frequently.

Chapter 7: Tips and best practices

Secondly, the content on the digital menu board or sign must tie in with existing promotions. As we discussed earlier, digital signage and menu boards in restaurants present an excellent opportunity to feature special meals or offers for many reasons. The specials can be seen easily and prominently and, as of right now, digital menu boards catch the attention of patrons and passers-by.

“Let the visuals do the talking,” Grosso said. “Even when there is sound involved, the visual aspect is still most important when trying to gain attention and lift sales.”

Third, Grosso said all retail digital signage must have a “call to action.” The customer must be told to either “Try it now,” or “Ask an associate,” Grosso said. Ask yourself the question: “What do I want the customer to do after they see the sign?” With dynamic digital menu boards, chances are you want the customer to try whatever new promotion is being advertised. Give a command that lets the customer know the next step to buying the product, or meal in this case.

Many restaurants and stores are now offering food samples, so Grosso suggests using digital signage to replace the human attendant that usually gives out those samples. The sign can present more information in a shorter amount of time than a human.

In conjunction with the sample signage, Grosso also said having a constant area in the restaurant or store designated for samples will result in more sales and more views of the digital sign.

“You have to train the customers to look for that type of area,” Grosso said. “Digital signage helps merchandise it and gives you the opportunity to cross-promote other options.”

Lastly, Grosso said restaurateurs and retailers need to identify their overall marketing strategy and decide how digital menu boards or signage will fit into that plan. It’s great to have the technology; for best results it must be used effectively.

“Digital signage by itself won’t do the job for you,” Grosso said. “The best results come from when retailers think through their strategy and incorporate digital signage into the business model.”

Glossary of Digital Signage terms

For a more complete glossary, visit www.digitalsignagetoday.com.

A/V distribution system: The technology used to carry the video and audio signal from the digital signage player to the display device.

Content: The full-motion video, audio, promotions, messaging and information you wish to deliver. It may include pre-recorded information, news feeds or pricing and merchandising information delivered from the POS system.

Content distribution server: The computers where content is stored, managed and distributed to players via a network.

Content management software: Specialized software used to schedule the delivery and playback of content at multiple devices, as well as to monitor performance and track and report on the execution of the scheduled events. More advanced content management software packages also include authoring features and most include screen formatting and production capability for screen crawlers and other information feeds.

Digital signage: The creation, management, scheduling, distribution and display of electronic media with information of particular interest to a selected audience.

Display devices: The actual hardware displays on which the content is shown. These include plasma and LCD displays, projection onto a screen or holographic device, interactive kiosks or CRT devices and any number of emerging display technologies (OLED, electronic ink, PLED, etc.).

Distribution network: Provides the delivery and feedback infrastructure to pass information to and from the display locations. The network can take multiple forms: satellite, Internet, LAN, WAN or wireless.

Media player: Typically PCs or special-purpose media devices used to store and deliver content to the display devices on the defined timetable.

Multi-channel player: A player capable of streaming more than one channel of unique content at a time.

Playlist: A list of clips and their play order by time or other heuristics.

Playlog: A record of information created from the digital signage system reflecting the content played, the system performance and other data.

Conclusion

Digital menu boards do a lot more than just tell a customer the price of a food item. They are more than just decoration in a restaurant.

Digital menu boards are a powerful marketing tool. A digital signage network not only can solve problems in restaurants such as dayparting and price change challenges, but also can create new opportunities for customer contact and promotion through this growing medium.

With that being said, deploying a digital menu board network requires more planning and attention than traditional menu boards. The trade-off is that, when deployed efficiently and effectively, digital menu boards have the ability to drive more traffic to restaurants and improve the dining experience for your customers, making them a welcome addition for both consumers and owners.

Appendix:

Serving up profits with digital menu boards

By James Bickers

From QSRWeb.com

For a restaurateur, upsales and upgrades represent some of the most profitable sales possible. Digital menu boards can attract viewers, generate product excitement and have a tangible effect on revenue.

Although McDonald's got rid of its "Super Size" value-meal program several years ago, both the concept and the phrase remain familiar to virtually all shoppers. It is hard to find a fast-food or quick-service restaurant that doesn't offer some kind of combo, value or upsize pricing.

The reason for this is pretty clear: Given the economies of scale of the restaurant business, the extra money charged for such an upgrade is much more profitable than the initial purchase, dollar per dollar. The profits earned on those extra few fries and few ounces of soda are enticingly high, the costs tantalizingly low.

Typically, restaurants count on the reliability of their front-line staff to offer the upgrade to each and every customer. Since that staff consists of human beings, though, that doesn't always happen.

Some large chains have experimented with digital signage as an accompaniment to their traditional static menu boards. These displays allow them to serve up eye-catching animations and designs that remind customers to "make it a large."

Two different strategies, two different results

Different companies have taken different approaches, some more successful than others. Jeff Porter, executive vice president of Scala Inc., pointed to a recent McDonald's installation that involved replacing all of a store's menu boards with plasma displays, allowing the dynamic updating of prices, "and occasionally, a Big Mac would wiggle to draw your attention."

Burn-in was a problem, he said, due to the static images. Worse still, average revenue per customer wasn't improved. "Just because a Big Mac wiggled from time to time did not cause customers to pay more for a Big Mac or buy two Big Macs," he said.

Alternately, Burger King introduced a digital menu system in 300 of its Germany stores, but with a different focus: Rather than replace the existing system entirely, a single 42-inch screen was placed in the middle of the static signage, and that display was used to push daily specials and upgrades.

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“Guess what? It worked,” Porter said. “Average revenue shot up and the cost to deploy the system? A lot less than replacing all the menu boards with screens. Burn-in was not an issue here, since there was no static imagery on the screen.”

How typical was the Burger King experience? Do other restaurants stand to benefit from adding a digital component to their in-store menus and signage?

“Unofficial, anecdotal evidence says ‘Yes,’” said Brad Gleeson, president and chief operating officer of digital display pioneer ActiveLight Inc. “Of the pilots I am aware of, the challenge presented was to drive sales of higher-margin goods. Reports have shown double-digit increases in same-store sales of these items where the item was displayed using digital signage.”

A strong branding and back-office tool

Gleeson said digital menu signage does more than just push specials – the displays become vehicles for more robust branding and co-op opportunities.

“Cross-over promotions such as movies are an obvious one, but now other brand sponsors – such as the nearby theme park – can reach this audience where previously it had been difficult or impractical,” he said.

Porter is keen to point out another benefit of digital signage – the network infrastructure required to deliver menu and marketing content can also be used to deliver other materials, even when the store is closed. For instance, in the case of Burger King GmbH, the displays were used to allow the company CEO to deliver a motivational message to all of the chain’s employees just before opening time each day.

Likewise, signage networks are excellent vehicles for training, eliminating the need for videocassettes or DVDs shipped from the home office. “That’s an amazingly powerful tool for an amazingly small investment,” he said.

Slow but steady adoption

As with any new technology, adoption is slow, especially given the cost – this is not an insubstantial investment. The franchise system also creates difficulties in rolling out new solutions.

“You almost have to sell the solution one store at a time,” Gleeson said. “Since these chains tend to be franchise-based, the final decision-maker tends to be the franchisee. The corporate HQ generally doesn’t want to have to pay for the technology, and so the local storeowner must be convinced. There’s always a bit of ‘Sure, it worked in that store, but my market is different, that must be overcome.’”

Appendix:

And while there might come a day when the lion's share of restaurants replace their static menus entirely, Gleeson doesn't see that day coming in the near future.

"Eventually, it may be practical to replace all menu boards with digital displays, but that it's probably overkill," he said. "Customers and chains are very comfortable with the format of their existing static menu boards and are using the technology to enhance this rather than replace it."

Why retail needs digital signage

By James Bickers

From SelfServiceWorld.com

Why does the retail world need digital signage, and why now?

Jeff Collard, Omnivex Corp.:

Retailing has changed from a product-centric business to a customer-centric business. Shopping is now a user experience where services and products must be built around individual customers. Digital signage allows you to customize offers around each individual customer and offer the appropriate product based on each shopper's needs at that moment in time. It also allows retailers to optimize their message around their capabilities at that moment based on variables such as local inventory levels and external conditions.

Ken Goldberg, Real Digital Media:

The increasingly fragmented nature of broadcast TV and the advent of the DVR have made the traditional mass medium of television less efficient and often a crapshoot. Digital signage offers a very efficient means of bringing the message – whether it is the retailer's message or the vendor's message – to the "last mile" of the consumer cycle. The message is delivered to the consumer while he is in the store, with merchandise

Appendix:

in arm's reach and a cash register nearby. Compare that with a message delivered to a consumer who is lying in bed, distracted, with a TiVo remote in his hand.

Retailers have used signage since the advent of the trading post. As mom-and-pop gave way to chains, the ability to ensure 100 percent compliance with signage programs eroded. Digital signage offers one way to ensure that important messaging is delivered, taking the store associates out of the equation.

Scott Koller, Wireless Ronin Technologies: I believe the biggest role that digital signage plays in the retail environment is to keep the in-store marketing message relevant and as dynamic as other forms of marketing media – primarily TV and the Internet. In-store digital signage allows for instantaneous updates to marketing messages in a dynamic manner that has proven to provide better recall rates and generate unplanned purchases.

Wayne Ruttle, ADFLOW Networks: The primary benefit of digital signage for the retailer is to enable better consumer messaging at the point of purchase, with much more targeted and timely information, specific to their shopper demographic. Brand enhancement, a modern and state-of-the-art shopping environment and sales lift are also benefits

for the retailer. For the consumer, the benefits include an enhanced shopping experience, more information and a more educated purchase.

Why now? The cost of display screens and technology has dropped to the point that an attractive ROI is very real, and the measurable impact that mature retail digital signage networks are having on specific business objectives is significant.

Anthony Uhrick, NextWindow: Retail needs to try something new. An extraordinary amount of precious marketing dollars are spent simply trying to out-shout the louder voices. Most ads are too general to target individual needs and desires, and many of these marketing dollars are probably wasted.

How have consumer attitudes changed in recent years, and how does that affect the work retailers must do to reach them?

Collard: Customers are much more demanding, and they expect empowerment. Customers are time-constrained, they are not willing to wait and, since they have an abundance of choice about what they buy and where, they may set unrealistic demands on their suppliers.

Koller: Consumers have not changed as much as they have reacted. Retail has a 34-percent voluntary turnover rate. The ability

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for a consumer to find the proper help within the retail environment is being compromised. In addition, product and services continue to grow in complexity, which compounds the problem.

Ruttle: Consumers are not only much more technology savvy, they are also much more educated and their expectations when shopping are much higher. Consumers are becoming accustomed and demand to be communicated with via digital display monitors, and don't even see static point-of-purchase messaging. They also want to be entertained and not just bombarded with messaging.

Uhrick: With a whole generation brought up on instant messaging, video-on-demand and iPods, the attention span of most people continues to shrink. Customers are impatient and want information instantly.

Any general thoughts or rules of thumb to keep in mind when planning integration into the retail environment? Anything definitely not to do?

Collard: The display must become part of the environment with content that reflects the surroundings. Size and orientation will depend on location and products. As an example, a widescreen (16:9) display in landscape fits the natural field of vision for

most people. If you place a landscape screen in front of your merchandise, the viewer won't see the product.

Goldberg: The time is coming when the concept of integration will be important. Digital signage has been implemented as an "island" of technology so far. As retailers take over ownership of these networks, as I believe they will, the requirement to become integrated with other key applications – POS, merchandising, CRM – will become paramount.

Ruttle: Strategic thinking is required to ensure the digital signage display screens are positioned within the store to take advantage of consumer behaviors like traffic patterns, dwell times and the overall look and feel of the intended shopping experience. Don't put screens where consumers won't see them, and don't let the messaging or content on the displays become outdated or the consumer will only look or engage once.

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Fast tech: Romancing the brand

By Paul Barron

From *FastCasual.com*

Picture the sun warming your face as you listen to waves lapping on the beach. You look out at the water and you're amped because you see a righteous boggas wave coming in that you can't wait to ride — even if it probably means you'll end with a gnarly wipeout that sends you back to the beach.

Just as you're about to grab your board, you hear "How may I help you?" and you realize you're not at the beach but standing in line at Malibu Subs, the newest dining venue at the University of Southern California (USC). Malibu is a place where getting a stoked egg salad made exactly the way you want it is just as important as watching the large flat-panel display showing extreme surfing around the world.

"I like to call it *eater-taining*," said creator and director Michael Gratz of the award-winning Hospitality Services Division at USC.

Gratz, whose formal training began in Germany, opened luxury hotels in California before joining USC in 1994. Since his arrival, he has introduced brand-name franchises on campus, including Betty Crocker's Kitchen,

Colombo Yogurt, Jamba Juice, Krispy Kreme, La Salsa, Rice Garden and Wolfgang Puck Express, to name a few.

Malibu Subs, a risk that Gratz took and has spent the last two years preparing for, is the 34th dining venue on the University Park campus at USC. It celebrates California's surfer culture while adding a healthy new twist on the traditional submarine sandwich. "Our students requested fresh and healthy, made-to-order sub sandwiches," said Donald Ranasinghe, director of operations at USC.

Gratz noted that "We're always looking at what is important to students today. This, of course, is a moving target with busy students who have high expectations. We have to be on the cutting edge with food that supports their lifestyle."

Bringing Malibu to life

The evolution of Malibu Subs took many steps, the first of which involved Gratz teaming up with Porter Consulting, the company that conducted student surveys to help determine that a fresh, healthy sub shop was needed on campus. Next, steps involved designing the space, which took form with the help of architect Bob Mesher of Mesher Shing.

The surfer theme, developed by Gratz and his team at USC, is true to the lifestyle of the region and makes

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students feel at home, thus creating a connection with Malibu. But it wasn't until they began working with Epicure Digital Systems that the Malibu Subs brand came to life, both visually and emotionally, through high-tech digital marketing — marketing that helped drive the brand of Malibu Subs in terms of building relationships and convincing customers they were buying a high-quality product.

“I was intrigued with the customization that could be done with digital signage,” said Gratz, who says they bought the signage and marketing from Epicure even before committing funds to the project, knowing that they wanted to do something with digital menu boards.

“We looked at avenues on how to help bring this brand to life,” Gratz said. “We looked at the successful sub brands out there and realized they were lacking in terms of building a customer connection. We looked at digital signage as a way to bond with the people at USC.”

This approach has paid off for Malibu, since the visual experience created by a multimedia presentation and digital menu board immediately captures and engages customers, seizing their interest from the beginning. Gratz said this experience helps set their establishment apart from the rest.

Matching brand to clientele

The surfing image that Malibu presents is a brand that identifies with its particular customer base and location. “The concept of localizing a brand is not new,” Gratz said. “It's the marketing behind you that gives you that punch you need.”

Epicure's brand identity system involves every area from menu development and design to digital signage, motion graphics and promotion. For Malibu, the message was creating a brand to be perceived as healthy, with ingredients and toppings that reflect that not — just the standard mustard and mayo. The idea was to create a unique experience for everyone who bites into a Malibu sub.

“We ask the question, ‘What does the menu have to accomplish?’” Epicure president Harvey Friedman said, “with everything from placement of items, types of sandwiches, names and more.”

Digital drawing power

“The digital menu board makes an immediate connection with the customer,” Gratz said. “The initial draw is the signage, which gives the atmosphere, the feeling of being a ‘happening place.’”

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People want to go to restaurants that are super busy. “Food appeal is important, but to draw people in you have to have the right marketing,” Gratz said. In a visually driven food-service industry, digital signage plays a role, just as lighting and food display factors do.

Digital menu boards give operators the ability to change menu items instantly, which is costly with traditional static boards. For example, Gratz said they’ll look into adding hot sandwiches in the winter and possibly new vegetable selections in the spring, all of which will be easy to manipulate digitally.

At Malibu, there are four digital display screens, two of which display the menu and have moving marketing messages with revenue-producing promotions such as “double meat,” as well as educational promotions that highlight healthy items such as guacamole.

The suggestive selling that flashes across the screen creates momentum. “Most people are consistent when they order,” Gratz said. “Their thought process opens up when they see these messages. It’s one way to branch out and offer something different and help customers think outside of what they’re ordering.”

Customers move through a line where they have a choice of ordering

one of 14 customized subs created by in-house executive chefs. Employees present choices with everything from bread and meat to cheese and dressing. Short boards (6-inch subs) are \$3.95 and Long Boards (12-inch subs) run \$4.95, while chips and drinks are added on for \$2 more.

The other two screens have surfing videos from around the world. Gratz’s dream is to have a live Web cam on those screens where customers can watch live surfers — a way to bring Malibu to downtown Los Angeles in a real way.

“It’s about romancing the brand,” Gratz said, “visually stimulating with the screen and creating a unique sandwich.”

Gratz said colleges set trends before they are accepted in the general public. “Our students are learning about making choices for themselves. They come to campus and it’s our job to expose them to new choices with innovative and fun food while supporting their academic experience,” Gratz said.

If Gratz is right, then perhaps more operators should pay attention to the success of Malibu Subs and the digital branding and marketing that brought the company to life. On opening day, the company had \$4,800 in sales and received instant recognition

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on campus with people coming back the next day to try other menu items.

Gratz said the first location can be looked at as a test spot, with others to roll out throughout USC. The company is also considering developing merchandise and promotional items. “People will buy the brand if they are proud of it and believe it is high quality,” Gratz said. “The connection to Malibu Subs can go well beyond the store.”