Center *for an* Urban Future

SMARTER SMALL BUSINESSES

New York City's small businesses today face more competition
than ever, but technology could help level the playing field

The Center for an Urban Future is an NYC-based policy institute dedicated to highlighting the critical opportunities and challenges facing New York and other cities, and providing fresh ideas and workable solutions to policymakers. The Center's primary focus is on growing and diversifying the local economy, expanding economic opportunity and targeting problems facing low-income and working-class neighborhoods. The Center does this through publishing fact-based research reports that are accessible to a wide audience and holding high-profile policy forums. For more information or to sign up for our monthly e-mail bulletin, visit www.nycfuture.org.

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SMARTER SMALL BUSINESSES

NEW YORK CITY'S SMALL BUSINESSES TODAY FACE MORE competition than ever, from national chains with deep pockets to overseas companies with significantly lower costs. These new competitive pressures have made a challenging place to do business even more difficult for the city's small firms, many of which operate on slim profit margins and have little room for error.

Technology could help level the playing field for many of the city's small businesses. By adopting basic technologies that are taken for granted by large corporations—from Google ads and customer management software to digital payroll programs and point-of-sale systems—small businesses could expand their customer base, reduce their costs and become more efficient. Technology can springboard some small firms to the next level and help others simply improve their profit margins enough to survive.

Unfortunately, too few small businesses in New York are taking advantage of technology in a meaningful way. Across the city, countless neighborhood-based retail and services firms still do not have websites or engage in online marketing. Very few bodegas use technology to track changes in their inventory so they can make better decisions about which items to stock on their over-crowded shelves. A significant share of the city's small businesses haven't yet shifted to automated payroll systems and accounting software, which can save them both time and money.

The technology gap is particularly acute among neighborhood-based retail and services firms, especially those owned by low and moderate income New Yorkers and those located outside of Manhattan's central business districts. In many of these communities, our research suggests that fewer than 20 percent of small businesses are effectively capitalizing on technology.

This is not only a missed opportunity for countless small businesses across the five boroughs. It is a competitive threat for New York at a time when small businesses are only becoming more important to the city's economic future. Fortunately, as this report details, there are a number of things that that could be done—by small business owners themselves, as well as city economic development officials and nonprofit small business assistance organizations—to greatly increase the number of small firms that use technology to make them smarter, more resilient and better equipped to grow.

Small businesses may be the backbone of the nation's economy, but they are particularly crucial to New York City. Just over 90 percent of the businesses in the New York metropolitan area have fewer than 20 employees, a higher percentage than all but one of the 363 metro regions in the United States.

Beyond sheer numbers, small firms have been anchors of local economic growth in communities across the five boroughs. They also provide the goods and services that make New York unique. And they are sparking employment growth at a time when many large corporations are downsizing or opting to add new employees elsewhere.

But in recent years, it has become apparent that too many of these businesses have been struggling to compete in the changing 21st Century

low and moderate income New Yorkers, including immigrant and minority business owners.

The report, which was funded by Citi Community Development, is based on five months of research and interviews with more than three dozen small business experts, including business owners, leaders of small business support organizations, small business lenders, IT consultants and officials from government agencies that work with small firms. Further, our research was greatly informed by an extensive survey we conducted with more than 230 small business owners located across the five boroughs, who were asked about their use of technology in daily business operations, and their perceptions of the role it plays in making them more competitive. We also conducted numerous on-the-ground interviews

"The vast majority of business owners [in Washington Heights] are not integrating technology into their business operations."

ry economic landscape. These struggles prompted us to examine whether technology has the power to help small businesses in New York become more competitive.

The latest in a long line of Center for an Urban Future studies focusing on opportunities to boost the competitiveness of New York's small businesses, this report documents the extent to which small firms across the five boroughs are incorporating technology into their daily operations; details the obstacles that keep more small businesses from taking advantage of technology; highlights how technology can aid small firms; and outlines a series of recommendations for what city and state government agencies—as well as the private sector and philanthropic interests—could do to help small firms implement these technologies. While our assessment looks broadly at small businesses across the five boroughs, the report includes a special focus on firms owned by

in three neighborhoods—East Harlem, Brownsville and Richmond Hill—to explore in greater depth the prevalence of technology in neighborhood businesses. Just over half of those who responded to our survey earned under $55,000 in annual household income, classifying them as low-to-moderate income (LMI) individuals.

What we learned is that technology is no longer an option, but an essential tool for businesses to remain competitive. This is not just the case for large corporations and high-tech startups, but for nearly all small businesses—from the corner bodega facing more competition from chain grocery and convenience stores and pharmacies to the neighborhood restaurant that needs to attract diners from outside the immediate neighborhood to survive.

Today, numerous tools exist for the average mom-and-pop storefront or small-scale services business to benefit from technology. However, not

enough small businesses are employing technology in their day-to-day operations. Too few small business owners in New York understand the importance of technology adoption, and among those who do understand, many don't have a clear sense of what to do about it.

How pervasive is the problem? Experts vary in their assessment of the severity, but all agree it is stark—especially among businesses in low- and moderate-income communities.

Fewer than 10 of the 90 businesses along a stretch of Southern Boulevard in the Bronx are incorporating technology in a meaningful way, says Kerry McLean, director of community development for Women's Housing and Economic Development Corporation (WHEDco), a Bronx-based nonprofit that recently helped create the Southern Boulevard Merchants Association. "There is definitely untapped potential for the use of technology and websites and social media on Southern Boulevard. And I think that is symptomatic of the Bronx."

Only about five percent of small businesses in Washington Heights are tapping technology, according to Michelle Bhattacharyya, who until recently ran the Northern Manhattan Business Solutions Center (BSC). "The vast majority of business owners [in Washington Heights] are not integrating technology into their business operations. My staff estimates that 95 percent of folks that we see don't have the technology they need," she says. "When you're looking at the immigrant sector, technology is completely underutilized."

There is a similar disconnect in Chinatown. When asked how Chinatown businesses are integrating technology into their business operations, Wellington Chen, executive director of the Chinatown Partnership says, bluntly, "Poorly. A majority of our firms have no website. And when I offered to scan and post their menus on a business director website, a majority of them didn't want me to do that. They don't understand the importance or the potential payoff."

Eduardo Giraldo, a small business owner in Jackson Heights and former president of the Hispanic Chamber of Commerce of Queens, says

that "not even 10 percent" of the members of the chamber are capitalizing on technology.

"I would say 60 to 80 percent of businesses in the neighborhood do not use the Internet to market their business," adds Edwin Nieves of the East Harlem Business Capital Corporation. "There are a lot of restaurants in the area that are run by the chefs. They don't necessarily know the business side of what they're doing. Maybe 70 to 80 percent of them don't have sufficient access to technology to help their businesses grow."

Our survey of more than 200 small business owners across the five boroughs generally confirms what we were hearing in the field. Among the results of our survey:

• Barely half of the respondents felt that they were using technology to a sufficient degree to be competitive.

• Most small businesses overall appear to be using computers, email and high-speed Internet, but low- to moderate-income (LMI) proprietors are far less likely to do so.

• Barely two-thirds of responding small businesses had a website, and LMI business owners were significantly less likely to feel like websites were even necessary for their businesses.

• Point-of-sale (POS) systems are used by fewer than 40 percent of retail and hospitality businesses that would benefit most by them.

• Very few of the small businesses who responded to our survey take advantage of accounting and customer relationship management (CRM) software, which can provide important information about how their business operates strategically.

• Social media is used by two-thirds of respondents, but by substantially fewer among LMI proprietors (55 percent) versus non-LMI (75 percent). While more small businesses could learn to leverage social media on the whole, there is a sig-

nificant gap between LMI and non-LMI respondents.

• Among firms with three or more employees, just over half used an automated payroll service.

• Of those who used e-mail, only 60 percent reported using a professionalized domain name tied to their business name (versus an address tied to their Internet service provider, like @aol.com, or a free service, like @yahoo.com).

Our survey does reveal that growing numbers of small businesses are integrating technology into their daily operations. But far too many are lagging behind at a time when technology has become increasingly critical to business success. "Business owners are more aware of technology

website), Bay Ridge 5th Avenue BID (37 percent), 82nd Street Jackson Heights BID (40 percent) and White Plains Road BID (47 percent).[1]

Websites and social media, along with online advertising, came up in almost every conversation we had with business owners and experts alike. While there are many other types of technology that can have a radical impact on the competiveness and bottom line of small businesses, being online plays an outsize role these days in helping small businesses—especially those in low- and moderate-income communities—get to the next level. Why? Because increasingly that's where customers are found.

"Unless you have customers, you are going to collapse really quickly," says Jack Hidary, a New York-based serial entrepreneur and mentor to low income entrepreneurs. "I was mentoring a guy starting a car service on Staten Island.

"If you're talking about commercial strips, you're seeing a big void in technology being used on a day-to-day basis."

now than they were ten years ago," says Catherine Barnett, executive director of Project Enterprise, a microfinance organization that works with small-scale entrepreneurs. "But in terms of figuring out how to make it work for them, it's still limited. If you don't have your finger on the pulse of technology, you're going to be at a disadvantage."

One of the easiest steps a business can take to incorporate technology is to establish a website, but in many neighborhoods well under half of the local businesses have taken the plunge. For instance, we found that just 14 of the 177 businesses (8 percent) listed on the website of the Church Avenue Business Improvement District have their own website—and several of those that do are national retailers. The percentage of businesses with their own websites are also low in the Kingsbridge BID (31 percent of businesses list a

He knows car services from being a driver. But what he didn't know was how to get customers. He didn't know how to advertise on Google or Facebook. That's such an important tool. The more established small or medium sized businesses are doing that, but most of the folks in low-income communities are not yet connected."

Jose Avila sees the same thing in the Bronx. He heads the Garifuna Coalition, which focuses on helping members of the Garifuna immigrant community in the Bronx, including providing business advice to first-time entrepreneurs moving into modest retail shops. Many have failed. "Most of the failures," he said, "were due to lack of marketing. What they have had trouble learning is, how do you attract customers and keep them coming to your place?"

It's not just neighborhood-based retail and services businesses that are behind the technology curve. Many local manufacturers still rely primarily on faxes and phone calls instead of the Internet. Or they have e-mail addresses from AOL or G-mail instead of a more professional sounding domain name tied to their business name. "They're 10 or 15 years behind," says David Meade, executive director of the Southwest Brooklyn Industrial Development Corporation, of many of the industrial firms his organization works with daily. "It doesn't necessarily impact the client base they have already built up. But it impacts their ability to develop new clientele, and to get their word out there more."

For many small businesses owners—especially mom-and-pop retail shops—technology remains out of reach for many owners. In some cases, the upfront cost of implementing new technologies is the biggest barrier for small businesses operating on slim profit margins. "We do not have the money to upgrade many of our systems," says the manager of Space Market, a bodega on 62nd Street in Manhattan.

While cost is clearly a key factor, our research suggests that the bigger barrier is a lack of understanding. And it's not just that a failure to embrace technology keeps small businesses from growing; it is increasingly putting them at risk of survival. "If you're talking about commercial strips, you're seeing a big void in technology being used on a day-to-day basis," says Jeanette Nigro, vice president for economic development at the Brooklyn Chamber of Commerce. "There's a disadvantage to those businesses who don't adopt. Especially in communities where there is an influx of new businesses."

That's because not all small businesses are shunning technology. In fact, many younger businesses—often, but not always, launched by younger entrepreneurs who embrace technology as a given in their day-to-day lives—have a competitive advantage over older, more established firms. They are engaging their customers and potential customers head-on with tools like social media, and optimizing their finances and cash flow with tools like accounting software and computerized point-of-sale systems.

But this isn't the norm in many neighborhoods, where the typical small business is owned by someone over the age of 40 and much-less tech savvy. "We see tons of restaurants that are successful, but would never think to use Yelp to capitalize on their success," says Bhattacharyya, speaking of businesses in Washington Heights. "Whereas a restaurant in a gentrifying neighborhood might start out on Yelp from the outset."

That's a huge missed opportunity for those restaurants in neighborhoods like Washington Heights, Flushing or Woodside, to attract additional customers from outside of their neighborhoods. More and more New Yorkers are interested in exploring neighborhoods new to them, especially for ethnic food. Cultivating a following online is one sure way to get noticed by the restaurant reviewers in the *New York Times*, for example, who are looking for off-the-beaten-track options. The only reason they know about destination restaurants is because of social media buzz. Restaurants that know how to tap into that stand to benefit greatly. Otherwise, they're missing out on a big piece of what could be coming their way.

Newer firms almost always have a web presence, which increasingly is where consumers go both to shop, and to find basic information about where to shop—information they might have been more likely to retrieve from the Yellow Pages just 10 years ago. Many newer small business owners also embrace social media. And embracing it means not just having a page on Facebook or ensuring that the company is listed on Yelp; it means actively monitoring those pages to see what customers are saying, engaging them in dialog to share information and find out what they want, and keeping the messaging fresh in order to remain at the top of followers' newsfeeds. Those are marketing activities that many mom-and-pop shops didn't even think to engage in 10 or 15 years ago when competition was less aggressive from both national chains as well as newer, more adroit small businesses. Today, they have to not only learn to embrace new ways to engage their

> ## "If you don't have your finger on the pulse of technology, you're going to be at a disadvantage."

customers; they have to also learn how to do it online.

There are other important opportunities for small businesses to streamline their operations with technological solutions, like accounting software and inventory management systems that help business owners gain a clearer sense of what's happening from a business perspective in their firms: such as how much cash is tied up in inventory and which inventory units sit on shelves the longest costing them the most. Many small business owners may have an intuitive feel for these sorts of things—or believe that they do. But most experts agree that systematizing the process yields significant cost savings for firms. "Using software to monitor daily inventory in and out cuts down on waste from spoilage, says C.K. Chung, who until recently was director of the city's Lower Manhattan Business Solutions Center, which has delivered several workshops to restaurant owners on cost control strategies. "When the economy dipped a few years ago, restaurants that were able to improve their margins just a bit found it to be a critical differentiator in their survival. In a restaurant's cost structure, if food runs from 25-30 percent of total costs, that's quite good. One chef was able to leverage his management skills with an inventory control system to move his food costs to as low as 10 percent."

In one of the biggest ironies that small business owners face with respect to technology, many in our survey pointed toward the cost of technology as being one of the main impediments to their adopting it more widely. Yet it is often an owner's lack of a tech-enabled accounting system that

prevents them from getting capital. Lack of organized records showing a sufficient and steady cash flow is one of the biggest challenges to very small firms' bankability. In fact, Seedco Financial, a significant player in the alternative lending space for small businesses in New York City, often requires its loan recipients to attend QuickBooks training in order to begin moving toward better financial record keeping and decision-making. But education isn't as easy as that, Bhattacharyya says. "To my knowledge, I don't know anyone who offers training for QuickBooks in Spanish for free."

Given the lack of understanding of technology by many small business owners, it would seem that there would be no shortage of technology information and training opportunities for them. Unfortunately, that's not the case—at least not for the very small business owner. New York has a number of great small business assistance organizations, but few of them provide meaningful opportunities for proprietors to learn how to adopt technology. And those that offer workshops or counseling are generally doing so at a small scale.

The NYC Business Solutions Centers, which are overseen by the New York City Department of Small Businesses (SBS), do offer regular programs on QuickBooks and Website Fundamentals. At times throughout the year, the centers also offer additional courses for proprietors on technology issues, from learning about e-commerce to ensuring that their websites come up in customers' web searches. And SBS has awarded grants to a handful of small businesses for training employees on new technologies. But while these are important efforts, officials at the business solutions centers acknowledge that what they offer on technology education and training for small business owners is fairly limited.

New York has much at stake in ensuring that more of its small businesses are able to compete and grow. As such, there is a clear role for city, state and federal government agencies—from SBS to the United States Small Business Administration (SBA)—to promote technology adoption and assist small business owners incorporating technology into their daily operations.

NYC SMALL BUSINESSES AND TECHNOLOGY SURVEY

Summary Findings

Over the course of approximately three months from February through April 2012, the Center for an Urban Future fielded a survey that asked small business owners about their use of technology, as well as their perceptions of its role in their companies' growth. We worked with a variety of entities—including small business support organizations, alternative lenders and community banks—to distribute this survey to a variety of proprietors around New York City. The survey was available online as well as in hard-copy format to ensure that we were reaching business owners who were not online. Surveys were available in both English and Spanish.

We also worked intensively in three communities in New York City known for their concentration of independently owned small businesses. These included Liberty Avenue in Richmond Hill, Queens; Pitkin Avenue in Brownsville, Brooklyn; and several commercial corridors in East Harlem, in Manhattan. In these neighborhoods, the Center for an Urban Future's staff and interns fanned out to ask business owners about their experiences and perceptions.

Just over half (51.5 percent) of the 239 respondents reported household income of under $55,000 annually, classifying them as low- to moderate income (LMI). Two-thirds (66.7 percent) of LMI respondents reported business revenues of under $50,000 a year.

In general, the survey results revealed that many New York City-based small businesses have only begun to integrate technology into their operations in a meaningful way. While we found a relatively high degree of awareness of the importance of technology, and surprisingly high levels of the availability of computers and e-mail, too few of the businesses who responded to our survey have websites, use software that can improve their operations and take advantage of Web tools. The survey also highlights clear differences be-tween LMI and non-LMI respondents in many categories, signaling an important avenue for technology education efforts to increase awareness and uptake of technology solutions to daily and strategic business challenges by LMI firms.

Use of Technology

Barely half of respondents felt that they were using technology to a sufficient degree to be competitive. In one of the most telling results of our survey, almost half believed they need to be doing more with technology in order to remain aligned with their competition.

Most small businesses overall appear to be using computers, email and high-speed Internet, but low- to moderate-income (LMI) proprietors are far less likely to do so. While most respondents overall—nearly 9 out of 10—reported having a computer, that doesn't tell the whole story. Virtually every non-LMI respondent (97 percent) had a computer, while as many as one in five LMI respondents did not. There was a similar breakdown with respect to e-mail use. Almost every non-LMI respondent (98 percent) used e-mail, but barely three-quarters of non-LMI proprietors (78 percent) did.

Of those who used e-mail, only 60 percent reported using a professionalized domain name tied to that of their business name (versus an address tied to their Internet service provider, like @aol.com, or a free service, like @yahoo.com). However, only about half (51 percent) of LMI respondents said they have a domain name tied to their businesses, compared to 67 percent for non-LMI respondents.

A bright spot in our survey was finding that an impressive 95 percent of respondents had dedicated access to high-speed Internet service in their places of business, with LMI respondents only slightly behind their non-LMI counterparts.

Having this basic requirement satisfied means that other improvements in the use of technology should be easier to implement.

Barely two-thirds of responding small businesses had a website, and LMI business owners were significantly less likely to feel like websites were even necessary for their businesses. Unfortunately, more than 30 percent of respondents indicated that they did not have a website for their businesses. Four in five (81 percent) of non-LMI businesses reported having a website while only 59 percent of LMI businesses did. Of those LMI proprietors that do not have a website, more than one-third (36 percent) said it wasn't necessary for their business—whereas only 17 percent of non-LMI said that was the case. One-third of all proprietors also indicated they had no idea where to start to develop a website, deepening the impact that basic education in this arena is likely to have. As we point out in the report, in an era in which a basic web presence has become the fundamental way businesses let potential customers know they exist, then this is a significant gap that must be filled quickly, and for which the remedy—basic education around the development and hosting of a simple website—seems relatively easy to implement.

For those with websites, two-thirds reported managing them in-house. The biggest challenge, they say, is taking the time to keep it updated—an important part of remaining relevant to clientele if one's website has any content beyond basic contact and business information. Stale information online, experts say, conveys a level of disinterest to potential customers, hurting sales.

Point-of-sale (POS) systems are not widely used by those businesses that would benefit most by them. Of those respondents who identified as being in either the Retail or Hospitality sector—the ones who could benefit most from business intelligence offered by POS technology—only 37 percent used a POS system, half (50 percent) did not, and another 10 percent reported not knowing what a POS is. The cost of adopting POS systems has been a significant barrier for smaller, lower revenue businesses adopting these tools. But lower-cost alternatives, including on-line- and tablet-based (e.g. iPad-based) options now bring the cost down from several thousands of dollars to under $1,000. Still, business owners also need to appreciate the benefits that these systems provide, which speaks less to learning the technology itself, than to understanding how to use the information POS systems provide to make more informed, cost-effective decisions about their daily operations.

Very few of the small businesses who responded to our survey take advantage of accounting and customer relationship management (CRM) software, which can provide important information about how their business operates strategically. Like point-of-sale systems, when accounting and CRM software is employed smartly, proprietors can gain important insights into their businesses' operations. Accounting software is a tool that allows them to look under the cash register's hood and find out not just how much money they brought in over a week or a month, but how it varies over time, how the profit on those revenues varies and which product lines they should be focusing their attention. Packages such as QuickBooks, also help business owners to organize their financial information in a way that allows them to access capital more easily. All the commercial and alternative lenders we spoke with relayed anecdote after anecdote of small business owners who approached them for loans, only to be unable to demonstrate cash receipts large enough to justify a critical loan—perhaps for an important new piece of equipment, like a new refrigerator in a bodega, or a new floor sander for a home contractor. The problem is that many small business owners, indeed, have the cash receipts needed for a loan, but don't keep sufficient records to be able to prove it to a lender. Accounting software is an easy way to prepare business owners for these opportunities.

Similarly, CRM tools help business owners to hone their approaches to marketing and sales, ensuring that they are focused on those customers who are their most important, or potentially most

important, sources of profitability. Fewer than one in five (16 percent) of respondents indicated that they used this type of software to organize information about their customer base.

Social media is used by two-thirds of respondents, but by substantially fewer among LMI proprietors (55 percent) versus non-LMI (75 percent). While more small businesses could learn to leverage social media on the whole, there is a significant gap between LMI and non-LMI respondents.

Among firms with three or more employees, just over half used an automated payroll service. Overall, about one-quarter of respondents reported using an automated payroll service, but this number is skewed by the preponderance of one- and two-person businesses surveyed. When examining just those who have three or more employees, the number of firms taking advantage of this toll increases to just above half (56 percent). Automated payroll services can be expensive, and can introduce additional complexities into the payroll process (especially for those firms whose employees work irregular shifts from one pay period to the next). But most of those business owners we interviewed believed the benefits—including not having to calculate withholding and benefits deductions by hand each pay period—far outweighed these drawbacks.

Tech support for most small businesses is homegrown. The vast majority of support for what technology does exist in small businesses is provided in-house in one form or another. Across the board, about 55 percent of respondents indicated that they themselves—the business owner—is responsible for tech support. Another 15 or so percent say that a friend or family member provides help when it's needed. To the extent that business owners themselves are saddled by a lack of understanding of technology, the vast majority are not benefiting from additional, external perspectives in which tools might better serve their firms' needs.

Perceptions of Technology

Most business owners say technology is important, though more could be done to help low- to moderate-income (LMI) proprietors to more fully appreciate technology's benefits. Encouragingly, nine in ten respondents indicated that technology was important to the success of their companies, with a full two-thirds describing it as "very important". That said, the vast majority (88 percent) of those who described technology as "not at all important," were LMI, indicating an important group that still needs help developing a better understanding of how adopting even modest levels of technology might be helpful.

Business owners' understanding of what technology can do for them may not be clear, and the gap appears to be greater for LMI proprietors. Even though over half of the respondents believed they were using technology to a sufficient degree to be competitive in their sectors, more than three-quarters (77 percent) believed that additional technology would help increase their sales. In addition, 83 percent of respondents said that they planned to adopt more technology for their businesses. (Significantly fewer LMI than non-LMI businesses—76 percent of LMI vs. 91 percent of non-LMI—planned to adopt more technology, a notable difference.) Indeed, more than 95 percent of respondents said they'd likely spend more on technology in the coming year.

The fact that most respondents thought they were using enough technology, but still planned to adopt more—or thought more would help them—may indicate an imprecise awareness of technology's role in their businesses' strategic growth. Or it might signal an understanding that they will need to continue to adopt technology just to keep up.

Finally, among those not planning to adopt more technology, more than five times as many LMI as non-LMI respondents cited a lack of understanding as the reason. This, again, points to an important target group for greater education around technology's use and benefits for their businesses.

LOW INCOME BUSINESS OWNERS LAG IN TECHNOLOGY ADOPTION RATES

Our survey reveals significant disparities in technology adoption rates between business owners that report household income under $55,000 annually—classifying them as low- to moderate-income (LMI)—and owners that earn above this threshold. For example:

	LMI Respondents	Non-LMI Respondents
Has a Computer	81%	96.5%
Has a Website	60.3%	81.4%
Uses Accounting Software	50.6%	60.9%
Uses Social Media	57.4%	75.2%
Purchases Supplies Online	53.9%	76.1%
Email address is tied to business name (for example, not aol.com or yahoo.com)	52.7%	66.7%
Believe they use technology to a sufficient degree to be competitive	52.6%	61.2%
Plans to adopt more technology	77.6%	90.5%

WIRED FOR GROWTH

In an age where small businesses face more competition than ever, technology can provide an important lift

New York has never been an easy place for small businesses to succeed. But the landscape has become even more challenging in recent years for many of the city's small businesses as a result of increasing competition from larger and more efficient companies. These national and global competitors benefit from larger staffs and marketing budgets, get better deals on rents and more favorable interest rates, and take advantage of economies of scale to realize significant savings on supplies, energy costs and other basic expenses.

In this environment, technology can be a powerful equalizer for small businesses.

To be sure, technology is not by itself a panacea. If a company does not have a competitive product or service, technology will probably not make a big difference. But for businesses with successful products or services, technology can help close the gap between a small business and its larger, less differentiated and more efficient

competition. It can help them increase their exposure to generate sales, automate their administrative operations to reduce costs, use electronic inventory tracking to connect with the corporate supply chain as a vendor, or keep track of what their customers and the marketplace are saying about them.

"Adopting technologies reduces costs and increases revenue by helping small businesses to acquire and retain more customers," says Court Cunningham, CEO of Yodle, a New York-based company that provides an online marketing and technology platform to small businesses. "The small or medium business cannot afford to ignore business and marketing software. They're liable to lose a competitive advantage and miss out on a customer base that is typically easier to capture and then maintain with a strong technology infrastructure in place."

NYC SMALL BUSINESSES AND TECHNOLOGY SURVEY

Do you feel like your company uses technology to a sufficient degree to be competitive?
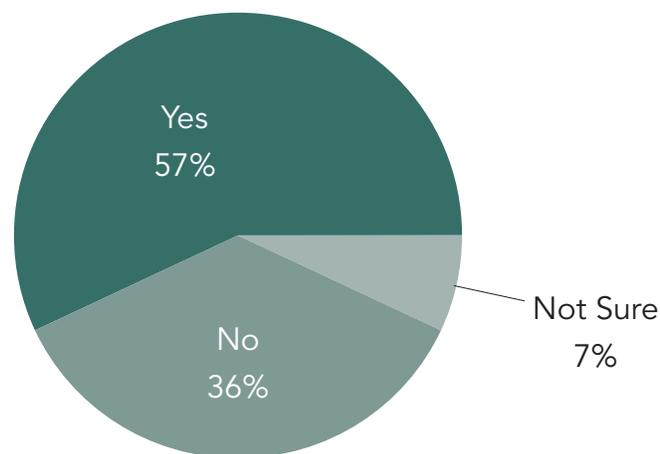
Yes 57%

No 36%

Not Sure 7%

For businesses with successful products or services, technology can help close the gap between a small business and it's larger, less differentiated and more efficient competition.

Most small business technology tools are about two things: providing owners with actionable information about how their businesses operate (about cash flow, customers and operations); and providing access to new markets that they might not be able to reach but for the Internet.

Used to their full potential, tools like point-of-sale systems and accounting software not only help business owners organize voluminous information that would otherwise be difficult to track and analyze, they do it in real time. An inventory management system, for instance, might alert a shop clerk that there are only six cartons of milk left, and that it's time to order more, keeping the shop from running out and missing potential sales.

Technology also helps small businesses to reduce costs, even though it usually requires an owner to make an up-front investment. A perfect case in point is Ed Abel, a serial entrepreneur and professional small business coach. One of the dozen or so companies he founded and sold includes a medical transportation service on Long Island. "When I started the ambulette business, I only had four vehicles," says Abel. "I could have used index cards and a white board to keep track of dispatching, but instead I went out and paid for automated dispatching and billing system so that as I got bigger, it would be easier to scale."

Abel's initial investment in the automated systems paid off. In the first two years of business, Abel moved from four to 12 vehicles, and then to 34 in the next several years. "Early on it was just me," He adds. "It wasn't until I got to 12 or 15 vehicles that I finally brought on a dispatcher." Without that system, Abel would have needed separate staff members much sooner to field calls from customers, to do the billing, and the dispatching. "At 34 ambulettes, I had one full-time dispatcher and two staff. Without it I would have had that many people at four to six ambulettes. Sure, I could have used index cards. But I would have never been able to move up to 12 vehicles as quickly as I did. It allowed you to go exponential."

In addition to helping small firms stay lean and efficient, the marketing opportunities associated with the Internet and social media have created extraordinary opportunities for small businesses to reach far beyond their local neighborhoods if they can identify the right markets. For example, just a few years ago, many small florists found F.T.D. or 1-800-FLOWERS—the global retailers that leverage local flower shops for distribution and delivery—to be a necessary partner for their survival, despite the fees florists were charged to participate. Those global companies leveraged their international reach and marketing to provide expanded selling opportunities for small florists. Now any florist can use the Internet and an international shipper to sell directly to a broader market.

While not enough small businesses are incorporating technology into their operations, awareness is building and tech's role in small business operations is increasingly becoming the norm. "The best thing that has happened to build interest in websites is social media," says Catherine Barnett of Project Enterprise. "It has become part of the lexicon so that business owners now understand both better. That makes it easier for them to think about how to develop relationships with their customers." That means business owners who are not doing it risk being left behind by those that are.

TOOLS OF THE TRADE

From accounting software and online advertising to social media, technology can help small businesses become more efficient, cut costs and reach new markets

There are a number of technological tools that small businesses can employ to remain competitive in an increasingly challenging environment. They include the following:

Marketing

Websites. Twenty years ago, when small businesses wanted to let folks know how to find them, they'd make sure they had a listing in the local Yellow Pages. Those who were a little savvier and could afford it might have taken out a small display ad on the same page that listed business hours, some helpful information about the goods or services provided, and maybe a tag line to draw potential customers in.

Today, vastly fewer people check the phone book. More and more people, when they're looking for a shop or a service, turn to their phone or their computer and search on it with a ZIP Code. Even customers who aren't completing sales online are often looking for a brick-and-mortar firm's address, phone number and hours of operation there instead of a phone directory. If your business is not online, you're going to be missed by consumers, and you'll lose sales.

Even if customers don't intend to purchase something online, many now prefer to browse there first. Denise Porcaro is the owner of Flower Girl on the Lower East Side. She opened her shop to create highly customized floral arrangements in 2007, but only set up her website late last year. She has found her customers want to be able to talk on the phone to someone from the shop while clicking away on their website to see examples of the arrangements, even if they come into the store to complete the purchase. But the ability to allow folks to browse, and potentially purchase, from home means a higher number of potential sales.

Even though she didn't intend to have a web presence, she realizes it has increased her sales.

"It wasn't what I wanted the business to be," she said "but I had my mind changed."

Websites aren't well suited to everyone. But for most retail and, especially service businesses, it can be a real differentiator—even for what people might think of as very traditional or low-tech businesses. What is required is that a business owner sees an opportunity to provide more clients with better service, and then to think about how technology can enable that. "We had a client in Atlanta who is a barber shop," says Paul Quintero, CEO of Accion-USA. "That's a very traditional business that wouldn't seem to benefit from technology. But what did he do? He turned tradition on its head. Instead of customers coming in and waiting in the seats until a barber was available, 15, 20 minutes later, he created an application on his website so that customers could schedule themselves. Suddenly, he was getting new customers from beyond his neighborhood who wanted to take advantage of the predictability."

Websites can vary drastically in their complexity and their cost. For a simple site optimized to be viewed on mobile devices, like smartphones, it can cost as little as $100 to hire someone to design and build. Complicated sites with extensive graphic design or services available to visitors can cost tens of thousands of dollars and take months to design and build.

While there are tutorials and templates that allow amateurs to build their own sites, a bit of awareness of the World Wide Web and basic standards is helpful. But it is here that many small business owners who are not tech-savvy begin to feel daunted. Because they don't understand what's required to design, program and launch a site, they feel uncomfortable making a decision about a service provider who can do the work on their behalf.

Social Media. One of the fastest growing segments of the Web, social media is content created and shared by individuals on the Web using platforms like Facebook, YouTube, Twitter, Wikipedia and Flickr that allow users to create and post their own text, images or video and then share that with friends or the entire Internet community.[2] For small businesses, social media can be an easy way to create an online presence without going through the effort or expense of developing a standalone website. Social media is also an inexpensive and yet powerful equalizer. "Facebook can be used to promote anything from mom-and-pop restaurants to a bank," says CK Chung, former director of the NYC Business Solutions Center in Lower Manhattan. "For microenterprises, if they want to compete with behemoths, technology is the platform on which they compete."

Being active in social media is also the most important way for a small business owner to find out what people are saying about their businesses—good or bad. For instance, monitoring sites like Yelp are critical for hearing about what works for customers, and where there are problems to address.

For a small business owner, monitoring the company's online reputation and engaging the public in conversations takes time and attention. "You can use it to try to reach whole new audiences at far lower cost," says Randy Shannon of the social media marketing firm Web Strategies. "It's not free—it takes time and energy—but it's much less expensive than other forms of media. You Tube can get you far more exposure than TV for a fraction of the cost."

Social media sites like Facebook require small business owners to have something to say that will be interesting to customers and would-be customers. It is, in part, a marketing channel, and requires that the owner who is posting have a compelling proposition for his or her readers to hook them in. But experts say it shouldn't be entirely about sales. "You have to provide information, provide value, just like any business interaction," says Shannon. "Only 10 to 20 percent of social media posts should be sales and marketing. The rest is about engagement."

For instance, the owner of a health food store might post a link to a story from a reputable site that discusses the health benefits of flax seeds. The next day she might post a series of recipes that use flax seeds. And the following day, she might let folks know there'll be a sale on flax seeds this weekend at the shop.

Done correctly, social media offers a useful way to engage in conversations with your potential customers, which can be a very effective way to attract them to your products or services.

NYC SMALL BUSINESSES AND TECHNOLOGY SURVEY

Does your business have a website?

Yes
71%

No
29%
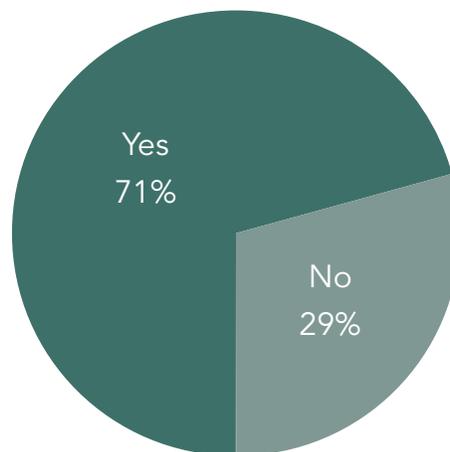
The health food owner might encourage readers to post their flax seed recipes, for instance. That draws people in and keeps them involved with a business, its products or services, and its brand. Jeanette Nigro of the Brooklyn Chamber of Commerce is seeing this happen with many of the younger firms that have opened in the past five years in her borough. "The more frequent level of communications with customers," she says, "the more stable your sales will be."

Web Analytics and Search Optimization. A corollary to being online is to understand where a company's web traffic is coming from, and what visitors do on the website once they're there. The Web experts we interviewed told us that if a small business has a website or a Facebook page and it

sense of what topics generate the most interest—or at what times of day. Reviewed regularly, these can give business owners important hints about how to optimize their online presence to appeal most to their customers and potential customers.

Sales

E-commerce. Beyond a basic web presence, many businesses may benefit from selling their products or services online directly to their customers. This can be a significant step up from a basic website. But as with websites, complexity can vary greatly. Simple sites allow customers to enter information about the product or service they wish to buy but require the seller to follow up to complete the sale. More sophisticated sites link with credit card processors to complete transac-

> For small businesses, social media can be an easy way to create an online presence without going through the effort or expense of developing a standalone website.

isn't measuring the effectiveness of those online tools through metrics, the company is wasting its time and money.

Tracking data—such as page visits, keywords and conversions—provides business owners with insight into their customers that can inform business decisions. For instance, seeing what search terms people use to find the business can help the firm to refine the website's wording to improve its ranking with different search engines. Also, seeing from which sites visitors arrive is also powerful. Is it primarily Google searches? Or perhaps a small business partnered with a half-dozen sites to include a link back to its website, but 80 percent of the traffic comes from two of those. That's valuable to understand when considering which partnerships to renew. A proprietor can also get a

tions in one step, initiating the shipping process by capturing the appropriate information and, in the case of physical goods, calculating postage, and facilitating the creation of shipping labels.

Milton Mendez runs the printing shop in Jackson Heights that his father started more than 40 years ago. For a relatively small shop in a highly competitive environment (for instance, business cards can be printed for free today by consumers on many websites) Mendez has managed to not only to survive, but to thrive. In addition to staying up-to-date with digital presses and direct-to-plate printing, he has launched a new website with e-commerce functionality that lines his shop up for continued growth. For his institutional customers, like Queens College, he will have Web pages customized for each client through which

they can place orders, update their information, and track status at-will. That allows his customer service representative to focus on newer clients or more complicated orders. And beyond that, the site will give Mendez access to many more customers beyond the neighborhood, as well as low-cost global shipping from services like UPS and FedEx. "You've got to try to blend in with bigger businesses if you want to compete," says Mendez.

Like websites, costs can vary widely from hundreds to hundreds of thousands of dollars. But an easy way for some businesses to get started is to leverage an online marketplace like eBay or Etsy. Both sites make it easy for a small business person selling products to establish a basic marketplace on the web while they identify ways of carving out their own place in the world of e-commerce.

Online Advertising. Online advertising is gaining in acceptance as a medium for reaching potential customers. Services like Google AdWords and Facebook Ads are attractive to many potential small businesses because they appear so cheap to deploy. These online ads work by being associated with keywords used by potential customers when they are searching the Web for a product or service. For instance, a hardware store in the East Tremont section of the Bronx can use either of these services to have their advertisement appear when individuals from the same area searching the Internet —Google and Facebook collect information from users to know where they are—type in keywords such as "hardware store" or "lumber." Each time a searcher clicks on a business's ad, the business is charged a small fee—typically pennies per click.

Businesses that advertise online maximize their exposure by understanding what keywords their customers—or potential customers—will be using to the find products or services that they offer. The more of those keywords they can include in the parameters for when and where their online ads are displayed, the more widely and frequently their ad will appear across the Web.

But more is not always better. The trick to maximizing the *value* (and not just the exposure) of online advertising is to find those keywords for which the business has a competitive advantage. If it's a hardware store that is open late or a business that focuses on eco-friendly products, then those are important distinctions to add to the

VENDING 2.0

Food vendors are some of the smallest businesses around, but even these companies are beginning to take advantage of online advertising services—thanks in part to 25-year old Queens native Deepti Sharma Kapur, who started FoodToEat.com

"I was studying in the library at Columbia Law School trying to figure out if I had enough time to go outside and wait on line for the Treats Truck," she says, explaining the genesis of the idea. What it spawned was a simple system that leverages cart owners' smartphones, which are becoming the lingua franca among very small business owners to solve their technology riddles.

The way it works is that small, inexpensive printers—similar to a credit card receipt printer—are connected to the street vendor's smartphone. Customer's text their order to the vendor's phone and a receipt is printed; the vendor acknowledges the order with a single-button reply. The order is then prepared and is ready for the customer to come and pick it up without having to wait.

At first, cart owners were suspicious of the idea. They were not used to anything other than taking an order from someone walking up to them. But as they saw the system working, more have adopted it, and some have even begun to take credit card orders through it.

The real payoff for the system, though, may be in smoothing out the seasonality of the carts' business. Winter has been a notoriously slow time for food carts. With FoodToEat's remote ordering, some began to take on deliveries in the wintertime to make up for the drop-off in walk-up business.

search parameters. Each of these keywords may wind up limiting the number of times a business's ad appears, but it will probably also maximize the likelihood that an online searcher will click through to the site and patronize the business—whether it be brick-and-mortar or e-commerce.

Unfortunately, without being thoughtful about they keywords they use, some small businesses can get themselves in trouble with online advertising. The low per-click charge for each ad can seem deceptively inexpensive. But if an ad appears from many different searches, the cost to a business can add up—especially if it doesn't result in a sale or a visit to a shop. Michelle Aaron of Uptown Girls Headwear in Sunset Park found this out the hard way. She launched an ad using Google AdWords recently and was surprised to get a bill for $400 worth of click-throughs, with no discernable increase in sales.

Like many things related to technology, mastering the requirements and benefits of online advertising can take up a significant amount of a business owner's time. The payoff can be significant, but it requires an investment—or a willingness to engage others for advice. Mark Caserta of the business consulting firm Main Street Complete, and a former owner of a retail shop in Park Slope—speaks from experience. "I've seen people and friends enjoy tremendous success with online advertising," he says. "But you have to be committed to spending time and money to make it work. I encourage people to test it out with some keywords and a limited budget to get a feel for what keywords work best with your clientele. It's also essential that you have really strong web analytics on the backend of your website in order to understand what keywords your potential customers are using to find you, and what sites they're coming to you from." Those all help focus the impact of ads, ensuring a maximum return on a business owner's investment.

Online Ordering Service. Restaurants in many metropolitan areas—and especially New York—have access to several websites that aggregate local restaurants' menus and facilitate ordering from them, either for pick-up or delivery. Ex-

amples include Opentable, Urbanspoon, Seamless (formerly SeamlessWeb) and GrubHub. These services help restaurants expose themselves to customers who might not otherwise find them. For instance, Seamless says they promote over 7,500 restaurants in 37 cities by getting their menus in front of their estimated 1.5 million active users. Importantly, these services often work with corporate accounts that subsidize employee meals. That allows small restaurants, such as neighborhood pizzerias, to be added to pre-approved lists for firm-paid meals—a segment of business they might not otherwise have access to. In both cases, they expose restaurants to many more customers, and will often process credit card transactions on their behalf—for a fee.

These services, however, are not cheap for small restaurant owners. Many of whom can pay 15 percent or more of each check to the ordering service, which can be more than they make on a delivery. Many small restaurants reported that they face a hard decision when thinking about whether the exposure to new customers and the additional business is worth the steep cut in their profit margins.

Financial information / operational streamlining

Accounting software. Accounting software like QuickBooks helps small business owners to organize their financial information. At the very least, businesses can track their receipts and expenditures—money in, and money out—on a daily basis. The result is that business owners can create reports from the software, at any moment, of what their financial position is. Completing tax returns becomes much easier as relevant financial information is tracked and tallied along the way. Applying for a loan is also easier when income and expense information is at hand in an easy-to-read report, rather than as a shoebox full of receipts.

But beyond these conveniences, the real power of using financial accounting software fully and consistently is in the way that it allows small business owners to ask important, strategic questions about their business operations—such as

how their cash flow varies over the course of a month, or a year. Or where the best profit centers are in their operations (versus just where the greatest revenue is earned). These can be powerful data points in helping owners, for instance, match their accounts payable to their receivables to ensure they are not caught short during their mid-month payroll. Or in determining which products or services to promote based on their bottom line, and not just their total revenues.

Point-of-Sale (POS) systems. A POS system is one powerful tool that more small business owners could be taking advantage of. It is in part a computerized cash register. But more than just tracking how much cash is in the till, most systems have the power to track the exact time of sales and what products or services each sales included. That allows a bodega owner, for instance, to track inventory by the minute and understand how long items have been on the shelf or when they expire. That's powerful for a business owner who is skating by on thin margins. Why tie up capital in inventory that sits on the shelves for months, or spoils and has to be disposed of before it's bought? Or, conversely, why miss out on a sale if you've run out of product? "One of the problems that I found," said Jose Fernandez, president of the National Bodega Federation and former owner of a bodega on East 189th Street in the Bronx, "is that a lot of products [on the shelves of the bodega] were missing, and unless a customer asked for it and said it wasn't there, I wouldn't notice."

In addition to real-time data, POS systems provide sales data over time. This can be incredibly useful information for small businesses. For instance, it recently helped convince one liquor store owner in Harlem to switch her hours of operation, closing on Mondays and staying open later on Sunday evenings. She did this after reviewing sales reports from several months and realizing that they had a spike in sales late in the day on Sundays right before the store closed, and very limited sales on Mondays. Now they're open when the customers are there, and closed on a slow business day.

POS can also provide powerful insight into customers, helping business owners increase their sales by providing better customer service. Most POS systems allow proprietors to store information about their customers: credit card information, their order history and any special instructions. "My POS allows me to bring up all of a customer's information—their buzzer number, instructions about not to buzz, but to call, if it's after 8pm so I don't wake up the baby," says

NYC SMALL BUSINESSES AND TECHNOLOGY SURVEY

Does your business use a point-of-sale system?

No
52%

Yes
36%

Not Sure
9%
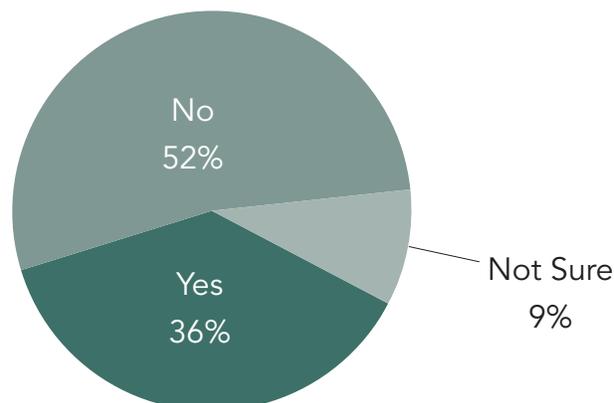
Frank Krushinski, who manages Firehouse Pizza, a small pizzeria in Harlem that recently moved to a POS system. "The customers love it. They don't want to have to do anything but pick up the phone and say they want a pizza and then the food shows up at their door."

That's the kind of customer service that helps a customer to choose a shop like Firehouse over a national chain pizzeria, or even a neighborhood competitor (assuming it's a decent slice!).

A POS system can be used even more creatively. Firehouse uses it to engage in suggestive selling—a technique that used to be the province only of large, well wired corporations. "When they call," says Krushinski, "I can see that they got chocolate cake for dessert last time. Then I can ask them if they liked it and whether or not they might want to order it again."

One extra item on each check, over the course of an evening, is the difference between a shop like Firehouse merely covering its costs and surviving, or making a profit and thriving. "Can you survive without this stuff? Probably," says Krushinski. "But it's much harder than it used to be. If you're not using technology, someone else is, and then you're in trouble."

POS systems can be powerful, but they are typically not cheap. A basic system, consisting of a computer, cash drawer barcode scanner and credit card machine, typically costs several thousand dollars—far in excess of a basic cash register. Increasingly, however, POS systems are using much more cost effective alternatives, such as iPads with online POS systems that cost around $50 a month.

Automated Payroll Services. For small businesses with more than an employee or two, especially those with hourly workers on irregular schedules, a payroll system can be an extraordinary time-saver for owners. Calculating payroll by hand—including differential wages (for example, because of overtime) and payroll deductions, reporting and transferring tax withhold-

BODEGAS: BEHIND THE CURVE

For many New Yorkers, the corner bodega epitomizes the neighborhood-based mom-and-pop business. Unfortunately, bodegas are also among the least tech-savvy businesses in the city.

There are an estimated 7,500 bodegas around the five boroughs.[3] With many failing to incorporate even the most basic technologies, such as software that keeps track of their inventory, bodegas are having a difficult time keeping up at a time of increasing competition from both national convenience stores like 7-Eleven and large drug stores such as Duane Reade, CVS and Walgreens, which now offer more of the staples that until recently were mainly carried by bodegas.

For this report, we visited 15 bodegas in Manhattan and the Bronx. Of those, none had web sites linked to their businesses, let alone reward point systems or Twitter feeds. Even businesses with multiple locations still did most of their ordering by telephone. "We do not have a web site," says the proprietor of the Madison Gourmet Grocery off of 66th Street. "I don't use much technology in my business. I do all of my ordering over the phone. Our office in the back does not even have a computer."

Further East, a member of the family that owns the Space Market on 62nd Street and First Avenue, acknowledges that her business is extremely low-tech. "We do all of our ordering via phone," she says. "Our business here is very simple and we use the systems we have used for a long time."

This bodega manager, who's parents own the business, seemed troubled that her family's successful businesses were not up to speed with how retail and consumer-facing businesses are run in the present day. When asked if her stores had a web site, she laughed, but her sarcasm quickly turned to disappointment. "If the city could do anything, I wish they could prevent so much competition."

Unfortunately, given the place of technology in retail, it is likely to be those businesses with fewer technological resources that will suffer the most. Indeed, one of the 15 low-tech bodegas we visited went out of business this June, a month after we visited them.

ings, and cutting checks or making deposits for employees—is both time-consuming and fraught with the potential for errors. Engaging a payroll services company, such as Paychex or ADT, allows business owners to enter key information about each employee once, and then automate the process on a weekly or biweekly basis simply by uploading employees' time clock data. These benefits free owners up to focus on the more strategic aspects of running their businesses for relatively low cost.

Despite these benefits, automated payroll services do have some drawbacks. First of all, there are dozens of options available through a variety of companies. Taking the time to understand which combination of services and monthly fees best meets a particular business owner's needs can be daunting. Checking with an accountant may be a good first step. Automated payroll services also remove some degree of day-to-day control from owners, who must still review payroll to ensure it's accurate. Errors that are detected, even if they occur infrequently, may be time-consuming to resolve through large national payroll companies. Finally, for those companies with complicated payrolls—for instance, those that offer many employee benefits that require deductions, or with employees working or living in different states—payroll services can provide significant time-savings, but they often charge for additional services like multi-state tax computations. In these situations, a payroll service may work best in higher-margin businesses that can afford the additional fees, and for whom they might be amortized through higher margins.

Specialized Operations Systems. This category includes many sector-specific applications that help position small businesses to compete with bigger firms—and to grow themselves. In this category are dispatching systems used by transportation and logistics firms, like trucking companies; and software that helps property management firms integrate the way they handle work-orders, monitor rent payments and manage tenant communications. Also, many food producers are seeking to move up and distribute to large retailers like Whole Foods. Increasingly, these national corporations are requiring their vendors to adopt computer systems that integrate with their supply chains.

For instance, Gourmet Guru, a relatively small specialty food distributor in the Bronx, has begun supplying the national retailer Whole Foods after agreeing to adopt Whole Foods' supply chain management system. Gourmet Guru invested in the appropriate technology to electronically receive orders from Whole Foods, and to allow Whole Foods to track Gourmet Guru's inventory and fulfillment in real time. Gourmet Guru has made the bet that investing in that technology will pay off in the market-expanding potential of supplying Whole Foods, which has become one of their biggest customers.

In Gourmet Guru's case, the same technology investment not only resulted in a bigger market share, it also is generating additional savings and efficiencies that save them money and time. Electronic order receipts relieve their sales people from having to enter orders manually. "Sales people can focus more on what they should be doing, talking to customers about their needs, asking about products, services—not administration," says Subrata Purkayfstha, who manages the company's accounting team.

And the new inventory management system also helps them to reduce the amount of loss they had due to expiring food products. With closer monitoring on what's in the warehouse and for how long, the company has been able to reduce their shrinkage from about three-and-one-half percent a year to between one and one-and-a-half percent. For a $30 million company, that's a substantial savings.

TRUCKING WITH TECHNOLOGY

Ken Deocharren is one of those illustrative stories of an independent entrepreneur starting small—at a micro scale, really—and growing his business exponentially, thanks to technology.

Deocharren is the president of Express Trucking and Courier, located near the John F. Kennedy International Airport in Eastern Queens. His company offers a range of trucking services for customers who need to move air cargo to or from JFK. It also routinely partners with FedEx, UPS, and DHL. Deocharren started out as an owner-operator courier with a single van in 2005, providing short-haul transportation for local firms—delivering small parcels, or payroll checks, for instance. By 2008 he had grown to 35 vans. In 2009 he bought his first cargo truck and, a year after that, his first tractor-trailer—without any real business for it when he made the purchase. But with the larger trucks on hand, Deocharren was able to quickly shift away from low-margin courier work into the more profitable air cargo industry. Since then, he hasn't looked back.

The quick growth was gratifying, but it also presented huge challenges. "I was struggling with internal control," Deocharren recalls. "I didn't know where the drivers were. I didn't know where customers' shipments were and when they were due." Providing up-to-the-minute information is a critical element of the service Deocharren provides in an industry that is defined by understanding and exceeding customers' expectations.

Deocharren found drivers abusing the clock by taking longer than necessary to complete trips. As is standard practice in the trucking industry, many of his drivers began each workday from the field—either from home with their truck, or after a night's sleep during a multi-day trip. This made it hard to track their start and end times. Deocharren tried managing his drivers from memory and paper records but, he says, it wasn't working. He realized that he needed to invest in a way that would help him manage the economies of scale he had created in his company.

His earliest technology investment was a system called Fleet Director from Teletrac—a satellite-based tracking system for vehicles. For an initial cost of around $500 and monthly subscription charges of $50 to monitor each of his trucks, Fleet Director provides real-time information about where shipments are and how his drivers are operating their vehicles.

"I know if drivers are speeding, or if they're hitting their brakes too hard," Deocharren says, which is a sign of aggressive driving. "Arrival and departure times are captured on a report that is constantly flowing to a computer screen; the E.T.A. of deliveries is constantly updated." This gives him information he needs to answer customers' questions about their shipment at any moment. "That is a huge selling point for us, and what often allows me to lock in a shipment." And because the system tracks drivers' routes, as well as start and stop times each day, it also improved his company's timekeeping and eliminated many "out-of-route miles," which, in turn, reduced fuel consumption. Installing the system also earned Deocharren a break on his theft and liability insurance premiums. All of this resulted in peace of mind for Deocharren, and significant increases to the bottom line for Express Trucking.

Jose Borges of the Queens Business Solutions Center, who has helped Deocharren navigate much of his pathway to growth, estimates the company has lowered fuel consumption by 15 to 30 percent, reduced overtime by 20 percent and unauthorized vehicle use by 30 percent, and increased productivity by nearly 50 percent.

But how did Deocharren, who had no technical training, know enough to make the right decision about investing in this system?

He asked other shippers what systems they used and he spent time researching the services that each system provided. But what was most essential is that he understood the pain points in his business with enough clarity and precision to know exactly what problems he needed to solve in his daily operations to allow him to grow. Armed with the right strategic questions to ask about running his business, he was able to thoughtfully describe where technology could help him answer those questions most effectively. Even if he didn't fully understand the exact functionality of the systems at the outset, he wasn't daunted by the information, either. This may be partly a function of his age—31—and the general technical literacy that comes from being in his generation.

And Deocharren didn't stop with better operational information. He recently bought a new transportation management system—a single point of entry for all of his company's data: operations, accounts payable, accounts receivable, driver payments, and shipping progress reports. It can tell him about his sales this week, or last month, and integrates with his accounting software QuickBooks.

"It cost me about $18,000 plus time to set it up. But it allows me to have everything more organized and get a better visibility."

Deocharren says that this technology is not a requirement to run his business, but it's a requirement to be competitive. "Most of my competitors have this, but don't use it to the extent that they can. We're completely integrated."

TAKING ADVANTAGE OF TECHNOLOGY

If used smartly and strategically, technology can help small businesses in a variety of ways

Technology is not a magic bullet that solves all business problems. It can be a tool that business owners with smart approaches can leverage to make their firm more efficient, more informed, and to find bigger markets to tap. "The reason you implement accounting software is not for you to make your accountant's life easier," says Jose Borges of the Queens BSC. "The reason is so you have a much better idea of what's going on in your business on a day-to-day basis, to see if there was a change in the business and to ask yourself why that was. Why were there were 15 fewer customers today? Why did I sell more coffee between 9 A.M. and 10 A.M. yesterday than I did today?" Without technology, owners lack a way to have a handle on what's going on in their businesses.

In other words, employing technology is not just about learning a particular software package or how to operate a piece of equipment. It's about understanding how to leverage the information it provides to be more competitive, or how to sell in the markets it opens up to a small firm. "Technology has to be tied to human capital," says CK Chung, former director of the Lower Manhattan Business Solutions Center. "Business owners need the skills and knowledge to use it effectively."

Employing technologies often requires owners to adjust their ways of doing business to take advantage of them, and that's where many proprietors get stuck. It's not enough for a business to have a Facebook page. It has to be monitored. The business owner needs to be thinking about how to convey interesting content to her customers through it. "It has to become a basic work function in order to keep it up," says Erica Dorn, business development officer for Accion-USA. "Otherwise it's a waste."

Eduardo Giraldo, former head of the Hispanic Chamber of Commerce of Queens, often sees this dynamic. He says of many small business owners, "They think, 'I have a website but I am not get-

ting any business.' But it doesn't work that way. You have a website and you have to advertise and market that website."

And small businesses need a strategy for employing it. Mark Caserta of the Brooklyn-based business technology consulting firm Main Street Complete tries to guide conversations with business owners away from particular technologies at first in order to understand the underlying business puzzle they're trying to solve. "We help clients look for business solutions instead of just a piece of technology. We'll often hear something from a business owner like, 'We need a computer to run a CRM.' Then we ask, 'Well, what customer relationship management software are you planning on using?' They're not sure yet; they just think they should have one. So then we ask, 'Can you tell me what you want to accomplish with that CRM?' And then we take it from there."

In the past couple of years, there has been an explosion in the use of mobile devices like the iPhone or iPad that allow individuals to instantly search for information, shop or download content. Last year, for instance, sales of mobile devices were greater than PC sales.[4] By 2020, Morgan Stanley predicts that the number of mobile devices could easily top 10 billion units. By comparison, the personal computer boom of the 1990s only sold hundreds of millions of units.[5]

This move to mobile applications opens up a huge window of opportunity for small proprietors in New York City who have been slow to adopt technology in their businesses. Indeed, over two-thirds of respondents to our survey indicated that they used smartphones as part of their businesses—with more than half of all low- and moderate-income business owners saying that they do.

"Phones are making information more accessible," says Catherine Barnett, executive director of Project Enterprise. "It's a cheaper way to access the Internet. It's portable. Many immigrants

are already using phones for other things. Folks in the mother country are receiving money from them through Western Union phone applications. So then they ask, 'What else can we do by phone?"

"Many people in Washington Heights don't have access to computers," says Michelle Bhattacharyya of the Northern Manhattan BSC. "So we said, 'You already feel comfortable with your phone? Great. Let's focus on that.'" The result was a breakthrough moment in getting businesses to finally think about their web presence. The BSC is putting on an information fair in Spanish for businesses to meet with representatives from Yelp, GroupOn and Living Social.

And it's not just mobile marketing, but other business functions, too. "Programs they may not have purchased for their computers," says Barnett of Project Enterprise, "they're downloading for their phones, like online banking."

The Northern Manhattan BSC and Neighborhood Trust Federal Credit Union are also working with an application developer who is interested in using text messages to register accounting software entries, which was modeled on an approach piloted in Africa. This would mean that business owners who don't use computers and don't have QuickBooks would be able to begin to collect and track their financial data more cheaply and simply.

DIGITAL DISCONNECT

Small businesses face a number of hurdles to adopting technology, from the upfront cost of implementing technology to a lack of understanding about what tech can do for them

The upside of adopting more technology is clear. So, what are the obstacles to more small businesses making this part of their daily business operations?

There are several and they are interrelated. But the two main threads are the cost of implementation and lack of awareness. The price tag of implementing new systems is not inconsequential, but experts and business owners alike say it's not the driving force that leads to their reluctance to adopt technology. "If you can rationalize the efficiencies for them, then it's almost an automatic gimme," says Jose Borges of the Queens Business Solutions Center. "The bigger issue is the fear of learning it—the complexity of the software and the education level of the business owner. Many are good at what they do for a living, but they're not tech savvy."

Many small business owners—especially those of long-established firms—are daunted by their lack of familiarity and understanding of technology, with nearly half of those who responded to our survey saying that it was the number-one challenge they face in adopting technology. The owners of many mom-and-pop shops or neighborhood service providers in New York City are in their 50s or 60s and didn't grow up using computers. Personal technology wasn't part of their business when they started, and most don't use Twitter or Facebook in their personal lives.

Until recently, many of these older small business owners have been successful without using technology. So shifting their mindset does not come quickly. Indeed, as expert after expert confirmed during the research for this report, the imperative to transition to technology has also been gradual. "There's a generational divide," says

Elli Papadopolus of the Grow America Fund, the small business lending arm of the National Development Council. "There's a strong belief that 'if it ain't broke, don't fix it.' But it's like your tire going flat from a small pinhole. You may not notice it's breaking until it's broke."

Jose Borges' father is a great example. "My dad ran a kosher bakery and pastry store on the Upper West Side. I would make fun of him because he knew the entire inventory at any given time based on what he produced and what he sold. I remember saying to him that he had to automate: put an inventory control system in place, reduce his loss from spoilage, things like that. I calculated we could improve the way we did business and see a 10 to 15 percent savings a year. But he refused. He sold the business in 2003, and I think one of the reasons was that he found it much more challenging to compete with the new cafes that were popping up and managing their inventory and operations using new technology."

"My dad was in business for 35 years," Borges continued. "And he retired young—he was 55. He could have stayed in business."

Education level plays a role, too. Many small business owners in New York City are also recent immigrants, who may not have advanced education, and have been slow to adopt technology into their daily operations. A recent report by Fund for Public Advocacy found that nearly 9 out of every 10 immigrant business owners in New York City don't have a website—well over the national average of about half. And nearly one-third of these firms operate on a cash-only basis, declining to accept debit or credit cards from their customers. Bank card transactions come with fees that make it hard for low-margin businesses to remain profitable on card sales without charging a premium. But studies have shown that consumers spend substantially more with cards than with cash, and cards are becoming significantly more prevalent in daily transactions. As that prevalence grows, the fees merchants pay to accept cards will increasingly be baked into the prices of goods and services. But until then, many business owners prefer cash as their legal tender.

Related to this, many of the city's small business owners face cultural and linguistic obstacles to adopting technology. "Relatively speaking, there is not as much of a problem getting people to use tech in Harlem, but it's much more of a challenge in Washington Heights because of the

What holds you back from adopting technology?

Cost of Implementation
47%

Lack of Understanding of the Technology
32%
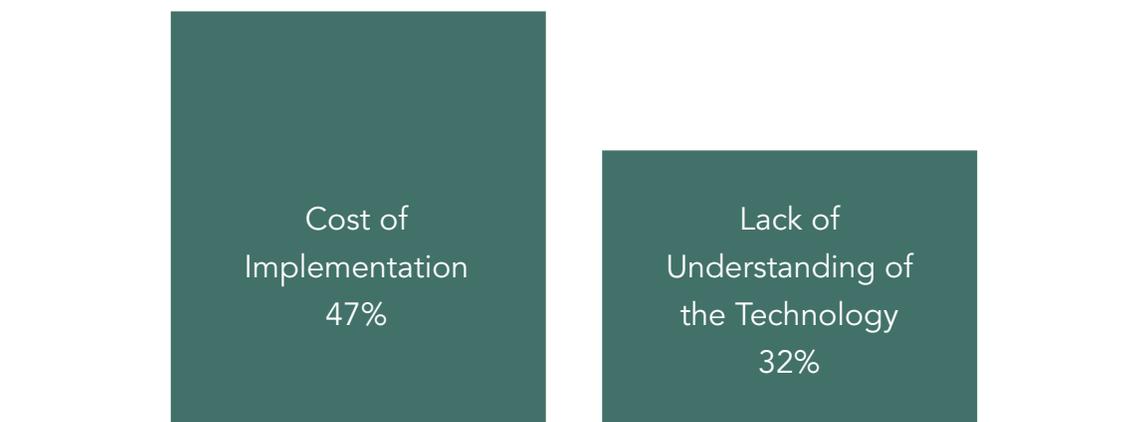
cultural and language barriers," says Bhattacha-ryya, who formerly ran the Northern Manhattan Business Solutions Center. "Subtle differences can be a stumbling block. Take, for instance, the way a community like Washington Heights gets its news. There's a radio on in every store. Everyone still uses a lot of that old media. There's a lack of a sense of urgency to use the Internet because, they think, 'Who's using it anyway?'"

And most small business owners—even younger ones who may be more technologically savvy and open to integrating these tools into their businesses—just don't have the time in the face of their day-to-day business demands to in-

"The irony is that the smallest businesses, who most need this technological edge, are the least likely to go looking for it because they do not have the time or expertise," says Court Cunningham, CEO of Yodle. "A small business owner's expertise typically lies in their chosen trade or profession, not necessarily incorporating different technologies into their company."

In a city and an era of vastly more competition, lower consumer spending, tighter credit restrictions, high rents, spiking energy costs and regular parking tickets on delivery vehicles, the relative importance of adopting technology for small business owners falls down the priority list.

With small businesses facing more competition, lower consumer spending, tighter credit restrictions, high rents, spiking energy costs and excessive ticketing, the relative importance of adopting technology falls down the priority list.

vestigate the tech options available to them, and to feel confident about the investment they'll need to make. Many are working 16-hour days, focusing on making sales, ensuring the electricity bill is paid, sending invoices out to customers, or changing a blown light bulb. Do they really need to be the webmaster, too? Most know technology can help them, but their lack of precise understanding of how to identify the right technical solutions, coupled with the dearth of available time to delve into the issue, makes it hard to overcome the inertia of the day-to-day. Delegating would be an option if a firm was big enough. But the average 5-person business, let alone the average mom-and-pop shop, doesn't have a CIO or a dedicated slot for an IT person. For most owners, that's basically their role.

This is especially true when owners aren't sure where to start.

Jonathan Moyal is the founder of the crowd-funding website Lucky Ant. His site helps small businesses identify small investments they would like to make, and then helps them raise a large number of small contributions from the general public in exchange for ongoing discounts or other types of rewards. The business owner gets an infusion of cash to undertake his or her project—and customers who have "bought into" the businesses are likely to remain devotees.

Moyal described a tea shop he approached in the West Village near New York University. "I walked in and said, 'How come you don't have a website?' The owner said, 'I really should, but it's not at the top of my priority list.' When I told him

I could help him crowdsource the building of his website, he was on board within seconds. It was my easiest sell. He knew it was important and that he was losing business because of it. But didn't know where to start, who to talk to, or how to finance it."

And while cost is not the predominant factor most businesses cite in discussing why they don't leverage more technology, it's definitely a factor. "It's not that they don't see the value," says Ed Abel, the former ambulette company owner who saw early the value of employing technology. "They say to themselves, 'I have a fixed amount of money. Do I suck it up and give it all to the software company?' In my role as their coach and mentor, I show them the value of making that investment up front. But ultimately they need to make that financial decision."

"What makes it harder," he says, "is that the tradeoff doesn't appear stark at first." In fact, the opposite is true: the outlay of cash at a time when businesses are undercapitalized seems a lot more painful. "Businesses don't suffer initially. They suffer when they go to the next stage. Early on, they're trading the efficiencies of automation for their own time. They say, 'Oh, I can handle this myself.' It's when they grow to the next stage that that do-it-yourself approach becomes unsustainable. And it costs them more to do it at that point because they have business going on and systems in place. It's disruptive and hard to catch up. I tell my clients, 'You can pay now or you can pay later. But when you pay later, you're really paying.'"

Many small businesses are not only capital constrained, they're also operationally constrained. As any organization grows the degree of complexity increases. When a small business relies on the founder to play too many roles, he or she becomes the constraint. "It takes a certain managerial skill set to get to $ 1 million a year in revenue," says Edwin Hong, chief operating officer of Seedco Financial, of growing small businesses. "The whole purpose of technology is to unlock additional productivity. It can be one solution that helps with operation, managerial decision-making, and customer relationships. But entrepreneurs need to free time up to adopt it."

Countless small businesses could benefit from advice and technical assistance from technology experts. But small business owners often struggle to find good support from IT consultants that they can trust and afford. Here, too, the lack of basic knowledge of the underlying technology makes it difficult to engage the right professional. Most small business owners simply feel like they're not aware enough to know how to even engage them. "There's so many people out there trying to sell you something," says Dawn Harris-Martine, the owner of Grandma's Place, a children's book and toy store beside Marcus Garvey Park in Harlem. Though she is 73, Harris-Martine has taught herself about websites, point of sale systems, and QuickBooks over the past couple of years. "I found that if you're not an informed consumer, you're going to get played."

Add in the concerns over cost and disruption, and it's enough to drive most small business owners to inaction. "Many business owners have been successful because they've hired the right folks to help them operate their businesses," says Borges of the Queens BSC. "But how do you manage someone that is doing something for you that you don't actually understand yourself?"

Trust is a huge issue. The very nature of what consultants are doing adds to the anxiety of not fully understanding what they're doing. On some level, the transaction is akin to the classic situation of a person bringing their car to a mechanic to be fixed. The stereotypical encounter is that a customer who is not mechanically inclined is at the mercy of the mechanic who suggests a list of repairs that are needed. Are they all needed? Will it fix the problem? Will it cost a small fortune, only to find out that the problem remains? But at the end of the day, if the mechanic doesn't do a good job, the car owner has the option of taking the vehicle to a more reputable shop and having the problem properly resolved.

However, in the case of a website developer, the code he or she uses may be compiled in a way that only that particular consultant will be able to fix. If the small business owner ends his or her relationship with that consultant, the next one might not be able to fix the problem and might have to start from scratch. In the meantime, if the proprietor is relying on that website to increase sales, that consultant has now set the business back. It's much more personal.

TEACHING TECH

New York's economic development agencies offer some programs that help small businesses adopt new technologies, but much more could be done

The challenge for small business owners is not to become technology mavens, but to learn enough to become an informed consumer of technology. The problem is that affordable educational opportunities that provide strategic value to small business owners are limited.

During the Bloomberg administration, the New York City Department of Small Business Services (SBS) has made significant strides in supporting small businesses. By creating a network of NYC Business Solutions Centers in each borough, SBS has made it easier for business owners to access a range of small business assistance programs, attend workshops and get one-on-one counseling. The agency has greatly expanded the number of Business Improvement Districts (BIDs). And it has significantly stepped up efforts to help small firms get access to financing. For instance, SBS partnered with Citi Community Development to establish the first formal referral program, in which banks—such as Citi—routinely refer small businesses that aren't yet able to qualify for traditional bank financing to the city's Business Solutions Centers, which then can help the firms make connections to micro-lenders, credit unions and other alternative sources of capital.

But while SBS is helping small businesses with everything from financing and finding workers to accessing government contracts, our research suggests that the agency could be doing more to help small firms understand and adopt technology into their daily operations.

On the one hand, the courses that are offered by the city's Business Solutions Centers include just two that are focused on technology: Website Fundamentals and QuickBooks. A third, Business Financial Management focuses on bookkeeping principles, but according to Jose Borges, who teaches the course at the Queens Business Solutions Center, it emphasizes the automation of accounting. (None is currently offered in another language but Website Fundamentals, Financial Management, Business Basic and Mastering Marketing are now being translated into Spanish and should be ready in the fall.) These courses are oversubscribed and funding is limited. "There is overwhelming demand," says Brad Seader, director of the Queens Business Solutions Center. "The QuickBooks course has only 20 seats and is offered once or twice a quarter—occasionally as often as once a month. There's a budget for courses at each center and we have to spend that on other business education courses as well."

On the other hand, none of the courses offer a comprehensive view to encourage small business owners to think about technology not as a discrete solution, but as a series of possible tools to provide more information about their business; that can help them increase their market share, reduce costs and become more profitable.

One person familiar with NYC Business Solutions—the network of community-based business training and support centers funded by the NYC Department of Small Business Services—told us that the services offered by the business solutions centers is fairly straightforward and not squarely focused on providing a range of technology solutions. "The business specialists in each of the centers specialize in financing, recruitment and launching. Business technology, per se, isn't a category of focus, but individual specialists may be aware of certain technologies. At the launch period, they do meet individually with owners on technology options that may be useful for them. They ask, for instance, 'Have you considered using QuickBooks?'"

The solutions centers also face challenges from the sheer differences in technical literacy on the part of business owners. "People come in with some wildly different ranges of tech awareness," says Seader. "That makes it hard to tailor programs to their needs. Some want to learn how to

MAKING TECH SIMPLE

A bright spot in the world of technology training for small businesses comes from the SCORE Foundation. Their Tech Made Simple web series and associated set of how-to guides explain a variety of important business-related technology solutions relevant to almost any business owner. The well-organized and highly contextualized modules begin with the important question that will be familiar to any business owner: "What is the challenge in your daily operations that you would like to solve?" Once that has been identified, the workshops offer suggestions on how to strategically approach many problems with technology as a tool, not as a magic bullet or as an end in and of itself. Indeed, they step viewers through the process of developing a technology plan, akin to a business plan, in order to help business owners make thoughtful decisions about how to prioritize investments in solutions that will have the greatest strategic benefit for their businesses.

The web series, which was put together with funding from a dozen corporations, including Google, Cisco, AT&T and Constant Contact, was the outgrowth of a series of focus groups conducted across the country in 2010 that included business owners with 25 or fewer employees. Owners were asked what kinds of solutions they were looking for. "Most businesses said getting more customers, getting paid, and managing cash flow," says Heather Hendy of the SCORE Foundation. "Those are not necessarily tech-related, but it led us to ask how they can solve those problems by leveraging technology."

The online modules and resources are available to any business owner who feels comfortable accessing them online. But while SCORE also provides the materials and curriculum to dozens of locally based chapters across the country for in-person trainings, this does not include the New York City chapter. "We direct them to the national website," says Jim Alles, vice chair of the city's chapter. "It's hard to improve on that." Maybe so, but for those business owners who might not feel confident accessing the material online, or who simply learn better in a group setting, this is a real missing piece.

use e-mail. Some are ready to install a customer relationship management system."

In addition, most of the staff at the various publicly funded business assistance centers are not themselves experts in technology, let alone the application of specialized packages like point-of-sale or CRM in the small business world. Individual counselors may happen to have some personal or professional experience with different systems, but there are no technology experts, per se, on hand to provide advice on how to leverage technology in executing owners' business plans.

Finally, an important obstacle to take stock of is that, frankly, some business owners are good at their trade, but not at running a business—or at least not at running their business in a competitive, technology-enabled era. There are probably dozens of small artisanal food producers who went into business because they make one of the most sublime chocolate chip cookies, or pickled smoked okra, or run the quaintest restaurant. But their passion for their product or service may not carry over into competency in running a business. Another business service provider mentioned

clients of hers who are construction contractors. "They're good at bidding and estimating jobs," she says. "But not in terms of keeping books and managing their cash flow."

For some of these entrepreneurs, learning about certain technological tools can help by providing them with information they can use to make different strategic decisions about their businesses. For instance, the contractors might develop a better understanding of why they consistently face constrained cash flows if they can review patterns of their income and expenses in an accounting management program over several months. But they also need to know enough about their business to even ponder the question in the first place. That has less to do with learning technology than it does about learning entrepreneurship. This is another challenge for business education—especially for established businesses.

"Most of the technical assistance providers are focused on the pre-startup stage," says Paul Quintero of Accion-USA. "Once you start a business, knowing how to grow and manage it is key and there are more limited options in this regard."

ON THE WEB

On the Federal Small Business Administration's (SBA) website, a single, brief page offers ideas on Using Technology to Stay Competitive. Several broad categories of advice are offered without any concrete suggestions of how employing the technologies will lead to competitiveness—or why they should be employed. It seems assumed that the reasons they will help are apparent. A related page on Ideas for Growing Your Business talks about business expansion and market-broadening ideas, but there is only one mention of deploying technology: "expanding to the internet". Another section on Using Technology (under the category of Running Your Business) refers generically to ecommerce and online advertising.

These sites do not provide any sort of roadmap to help small business owners get started and they don't detail where to look for additional information, or who to consult for more specific advice.

Likewise, a recent search of the website of New York State Small Business Development Center—a consortium of the 26 SBA-funded Small Business Development Centers across the state—listed 14 upcoming training courses being offered at five NYC-based SBDCs. Not one focused on technology, or appeared to offer a technology component.

Meanwhile, on the NYC government-operated NYC Business Solutions website, there are 16 possible business training opportunities among their core courses for which business owners can pre-register. Only two (QuickBooks and Website Fundamentals) seem to be directly related to technology. On the catalog page describing these courses, the word technology doesn't appear once. (QuickBooks appears under the "Financial & Accounting Course" category.) Nor does it appear in the FastTrac (New or Growth Venture) FAQ page. For the FAQ on the Strategic Steps for Growth course the word "technology" appears only once in describing the sectors of businesses the course might help. (The curriculum is not described for either of these courses.)

NYC Business Solutions Centers do offer a range of center-specific courses and events that are intended to meet the demands of each center's local business owners' needs. These are offered at varying intervals throughout the year and often cover important technology-based topics, such as using social media in hiring (versus marketing), e-commerce primers, understanding how to ensure their websites are easily found among customers' web search results. Unfortunately, because these courses are often one-off events held on an ad hoc basis, they are not advertised broadly to business owners on the NYC Business Solutions website. Nor, for the most part, do these courses place technology, broadly, in the context of an overall small business strategy to becoming more competitive in the marketplace. Without that important context setting, business owners are more likely to see these tools as disconnected puzzles to solve, rather than as part of a strategic approach to solving their day-to-day operational challenges, and to becoming more effective at garnering market share, decreasing their costs of operation, and becoming more competitive in a tech-enabled business environment.

SBS also offers another important program for more established small businesses looking to use technology to help move them to the next level. The agency's Customized Training Grant program helps business owners to defray a significant portion the costs of professional training provided to employees—up to $400,000—if the owner can show that the new skills will lead to increases in wage levels (for instance, through promotions or increased technical ability). Approximately two dozen of these grants are made each year, with an average award of between $35,000 and $50,000. They can be used to train employees on new equipment or technologies to make businesses more productive and more competitive.

Key to the awarding of these grants is that the training be associated with a transformation in the way a company does business. In the case of technology, this means not simply training staff on a new version of existing software.

An example of that sort of transformative approach is occurring at Dome Property Manage-

ment on Staten Island, which provides property management services to over 5,000 units in the New York Metropolitan area and beyond. In January of this year, they received a customized training grant of nearly $60,000 to train its 15 employees in a new software package that both Dome and SBS believe will allow them to move from an old fashioned, paper-based system of logs to track work orders and open issues with customers to an integrated system that allows its property management professionals and customer service workers to seamlessly track each other's work, demonstrably improve their overall productivity and provide clients with more timely information about their open requests.

In another case, Gourmet Guru, a high-end food distributor in the Bronx, was hoping to get to the next level by becoming a supplier to the Whole Foods. To do so, they needed to adopt the data systems that many national retailers require of their supply chain members—large and small.

Customized Training Grants can be powerful in helping small- to medium-sized businesses that are poised for growth, and that have a clear vision for how they want to realize that growth, to expand and increase their market share and employment. The relatively small number of these grants that are awarded, however, means they're not a game-changer at the citywide level.

SINGING A NEW TUNE

Fifteen years ago, a man named Popo, opened a Guyanese and Trinidadian music shop on Liberty Avenue in Richmond Hill called Popo Music. Popo might have marketed its Guyanese and Trinidadian CDs and DVDs in very local ways. He likely would have had a listing in the local Yellow Pages. He might have had handbill advertisements drawn up on quarter-sheets of paper to pass out in front of in front of local Caribbean night clubs or at the Lefferts Avenue elevated subway station overhead. Maybe he'd set up a table outside during the annual Holi festival parade.

None of these are a bad idea, even today. But in today's competitive marketplace, they can't be the only places Popo looks to market his wares. Instead of a Yellow Pages entry, he needs a web site that, at a minimum, crisply describes where his shop is and when it's open. Because that's where customers are going first to look for what they want to buy—whether they buy online, or in the neighborhood. And even better if his site is attractively designed and shares information about the types of musicians he features in his shop, including the variety of genres and any other accessories. Instead of passing out flyers at clubs or festivals, he might put together a page on Facebook that describes his store, and then link with the Facebook pages of local West Indian clubs or bands, commenting here and there on the posts others make on those pages, and reminding fans that he carries much of the same music from the homeland, that isn't yet available on ITunes. In addition to selling CDs at local parades and events, hoping to sell $100 worth of discs in the course of an afternoon, Popo might set up a basic e-commerce site on his web page that allows those who are browsing from home—perhaps from the Tri-State Guyanese diaspora on Long Island or in New Jersey where there are fewer stores like Popo's—to plunk down $11.99 (plus shipping and handling!) for a hard-to-find disc in a moment of inspired consumerism.

But Popo, who appears to be in his mid-fifties, has none of these marketing tools—tools that are really just updated versions of those he might have used a decade or so ago. The promise of technology doesn't make sense to him because he can see only the cost of it, and not the potential upside. "Everything goes up, up, up," he groused. "The electricity. The rent. Why should I stretch if I cannot reach?"

Popo hasn't made the connection between the newfangled technology, and the very traditional entrepreneurial task it would help serve—promoting his product into the hands of as many customers as possible. Marketing online is the way that's done, now.

RECOMMENDATIONS

Technology is fast becoming an essential tool to help small businesses in every industry to grow to the next level or simply remain competitive in an increasingly challenging business environment. While growing numbers of small businesses in New York—especially new enterprises and those run by younger entrepreneurs—are adopting technology; thousands have yet to do so in a meaningful way. This is not just a problem for individual business owners, but also for New York City, which has a lot at stake in seeing more of its unique businesses succeed in an age of increasing global competition. Our research uncovered some promising opportunities to help business owners to think more strategically about their firms—and about the role technology can play in them. As we lay out in the recommendations below, there are a number of things that city, state and federal policymakers can do to help more small businesses incorporate technology into their daily operations.

Increase the Number of Small Businesses that Incorporate Technology by 25 percent

City and state economic development officials should set an ambitious goal for increasing the number of small businesses in New York that adopt technology into their daily operations. It would be reasonable to see a 25 percent increase in the next three years.

Create a Specific Plan for Helping Existing Small Businesses, Not Just New Enterprises

While many new businesses are using technology tools to build their business, there are still considerable gaps for older business owners who did not grow up or launch their businesses at a time when tech tools were a standard way of conducting everyday business. City and state economic development officials should specifically target these existing businesses as part of any new effort to increase the rate of technology adoption. Fortunately, there is significant potential to help existing small businesses to become more technically literate. Many of these firms feel intimidated by technology, but become more open to adopting specific technology tools after being exposed to them. Many just need advice on navigating a process to review their business processes and adopt technology.

Unfortunately, the lion's share of support for small businesses is focused on people with business ideas, and not the existing businesses that are already part of the fabric of their communities. "If you divided technical assistance organizations between pre- and post-startup service providers, there is far more support for start-up businesses," says Paul Quintero, CEO of AccionUSA. "But the better bang for the buck is to help existing businesses."

In many ways, it's actually easier to help an existing firm to get to the next level, to position them for growth and to create job opportunities. They've already overcome the start-up phase and made significant investments in their firms.

Increase the Capacity of Community-based, First-line Organizations to Help Small Business Owners Get Up to Speed on Technology

Community-based small business assistance organizations, including microfinance groups, are critical to delivering services to small businesses—especially those owned by immigrants and minorities; many of whom are less comfortable seeking advice at government offices. Several of these organizations already offer training in QuickBooks and website fundamentals, but there is a great need to increase these efforts and expand upon the types of technology advice that is currently offered. City and state agencies, as well as philanthropic funders, should help ensure that more of the city's small business assistance organizations develop the capacity to provide advice

on technology issues and help more of those who are already offering some tech support to scale up those efforts. Perhaps even more importantly, it is critical that more of these local organizations expand their technology assistance beyond just training in QuickBooks and website fundamentals, since these are necessary but insufficient offerings for small business owners today. Existing entrepreneurs should be able to access local-level advice and basic training in the myriad of ways technology can help them with their businesses. No organization can be all things to all businesses, so it makes more sense to provide training on the more fundamental topic of how technology enables business growth across a range of functions. This would serve several functions:

- It would help business owners to think more strategically about their businesses, and how technology can help generally. That's a more productive mindset for an entrepreneur than worrying about learning the specific steps of a particular software package—at least as a grounding point.
- It would serve to educate business owners about technology generally so that they can become informed, competent and confident customers of IT consultants and services. This would serve to get publicly funded organizations out of the business of teaching specific technology programs and packages, and move them toward creating more tech-savvy entrepreneurs who can sustain themselves.
- Finally, as evidenced by the significant technological gap between immigrant-owned businesses in New York City, and small businesses nationally, it would provide a greater capacity at the local level to provide culturally sensitive and linguistically appropriate resources is sorely needed.

Help More Small Businesses Develop Technology Plans, Not Just Business Plans

It is now widely accepted wisdom that small business owners are likely to make the best strategic decisions about their firms when they have a well-conceived business plan. It has become a re-

quirement for any owner seeking capital—either debt or equity. But there has been much less focus on the need for new or existing businesses to create a technology plan. As a matter of course, any firm creating a business plan should also include explicit discussion of which business goals could be met by leveraging a technological solution. This could be particularly powerful for existing businesses that are looking for a strategic advantage in an increasingly competitive environment.

This is an area in which a philanthropic or public sector funder seeking to support small businesses and encourage entrepreneurship could create a pilot program to walk existing business owners who may feel their technologically challenged through the process of creating a plan. Fortunately, a clear roadmap for how to create a technology business plan already exists. The national small business assistance organization SCORE, in its *Tech Made Simple* web series, lays out a step-by-step process for creating a business technology plan. The process is particularly valuable for small business owners because, rather than simply suggesting a number of different technological solutions, it begins with a self-guided strategic review of one's business. Owners are encouraged to examine their strengths and weaknesses, as well as the opportunities and threats in their markets. From there, a number of business goals are developed. Technological tools that help realize each goal are reviewed.

What is foundational about this approach to a technology plan is that it does not lead with technology solutions; it leads with a strategic review of the business. As we found in speaking with many experts and business owners, the greatest challenges in adopting technology were often not an understanding of the technology itself, but of how a given technology helps with a business's strategic positioning in the marketplace.

Completing this program might include preferential terms for loaning a business capital to acquire strategically important technology. In a tight credit market for otherwise struggling businesses, these loans could be the difference between small businesses with outdated approaches to their

business dying, or reviving themselves in a new environment with new tools.

Leverage the Surprising Availability of Basic Technological Tools that Small Business Owners Already Have—Including Computers and Access to High-speed Internet—to Develop a Basic Online Presence for Them

Our survey found a surprisingly high level of respondents—nearly 9 of every 10—had a computer in their place of business; a similar proportion had access to high-speed Internet services. This represents a powerful opportunity to get many small businesses online in a meaningful yet simple way. Given that we know that consumers increasingly turn to the Internet first when deciding where to shop for a product or service—whether or not they ultimately complete their purchase online or in a brick-and-mortar shop—it is essential that neighborhood shops and service providers have a basic online presence in order to show up in the constellation of options potential customers find after conducting a search.

New York City's Business Solutions Centers recently began offering Website Fundamentals in each of its borough-based centers in an effort to bridge this gap. The BSCs should ensure that their outreach and marketing targets those firms that are already primed for getting online, and provide the strategic framing for why being online is critical in today's marketplace.

Create an AmeriCorps-like Small Business Technology Corps

In many of the commercial districts across the city, there are hundreds, if not thousands of mom-and-pop businesses that might be interested in adopting technology if there was someone to walk them through the steps and hold their hands. Working through merchants associations or business improvement districts, a corps of technologically literate recent college grads could farm out across these neighborhoods and spend 9 to 12 months in communities, helping businesses to assess their current needs, identifying technologies that might help them, demonstrating their ben-

efits, and then holding business owners' hands through implementation.

The corps might develop a relationship with reputable IT consultants who could provide more advanced technical assistance, when needed, to the corps members or on a fee basis to the business owners themselves. (This would help many small business owners to overcome their intimidation to hiring the right consultant.) But the corps members would continue to provide day-to-day handholding through implementation. The benefit for corps members, in addition to the community service experience, is to be exposed to entrepreneurship at an early point in their careers, potentially helping them to launch their own small businesses—whether in technology or not.

This could be easily piloted in communities like East Harlem, Richmond Hill and Brownsville where there are strong, business-focused community-based organizations to help sponsor demonstration projects.

Conduct Technology Audits that Demonstrate the Financial Benefits of Upgrades

Akin to the energy audits conducted by many utility companies for business owners to demonstrate the cost-savings associated with adopting more energy-efficient devices and materials, a similar audit and costs-benefit analysis could be provided for technology adoption. The analysis would account for the time required by owners and staff to train them in the use of the technology, and for any disruption in business the implementation might cause. The analyses would help to demonstrate the value and savings over time for owners, clarifying when an investment will pay for itself, and demystifying the adoption process—and the many anxieties adopting new technology brings.

Encourage Small Business Owners to Develop Peer-to-peer Communities of Practice—and to Share their Ideas and Experiences

Given the trepidation of business owners with respect to trusting and adopting technology, some of the most fruitful advice is likely to come from

peers, including recommendations on reputable service providers, like IT consultants. Dawn Harris-Martine, the owner of Grandma's Place in Harlem learned this the hard way. After a half-dozen or so attempts trying to develop her own website, and implementing a point-of-sale system, she began taking courses through the Harlem Business Alliance. The content of the classes was great, she says, but the real payoff was in whom she met. "By taking these courses, you come in contact with other entrepreneurs," she says. After shunning business owners meetings and breakfasts, she is attending them more regularly, even hosting some in her living room. "It took me five years to realize I couldn't do this alone, but I now have a crew. I have folk around me who all have their ears and antennas up. You become a little more savvy just by keeping in touch with that community."

Consider Encouraging Business Owners' Children in the Learning Process

In several of our conversations with technology service providers, they indicated that they found it useful to work with small business owners' children (those over the age of 21) to help bridge the gap in technology awareness and adoption. Often, training an appropriate family member who is more tech-savvy was a useful way to increase uptake. Deepti Sharma Kapur of FoodToEat.com worked with the children of several mobile food cart vendors to demonstrate and help train owners in the use of their mobile order terminals. Jason Richelson of the online point-of-sale system Shopkeep.com has similarly worked with owners' family members who had more familiarity with iPads—Shopkeep's interface—than the business owner did.

Bring SCORE's Powerful *Tech Made Simple* Online Training Modules to those Business Owners Who are Not Already Online

The SCORE Foundation's powerful series of online training modules that teach business owners not just about technology, but how to leverage it in their day-to-day business challenges, are among the best tutorials available for the general public. But for those business owners who aren't online, or who don't feel comfortable learning on their own, they don't have this option—at least not in New York City. While the national foundation provides the curriculum and training materials for trained instructors to conduct in-person trainings, the New York City chapter does not currently participate.

As our survey shows, many small business owners simply feel stymied by learning technology. Having the opportunity to be introduced to the powerful concepts on business strategy in *Tech Made Simple* in an in-person format seems like an important and missing opportunity. We encourage the New York City chapter to use the SCORE national's materials to do this.

Even better would be if these materials were made available to trainers who speak a variety of languages other than English. Rather than ask SCORE or its chapters to shoulder this responsibility themselves, we recommend that SCORE explore licensing the material to community-based organizations, or even local government agencies like the Department of Small Business Services, who provide business education to small proprietors. This could be a very effective way to increase the span and reach of this important technology education tool.

ENDNOTES

1. We analyzed the member directories of the BIDs websites.

2. http://www.affilorama.com/internet101/social-media

3. Estimate of Jose Fernandez, president of the Bodega *Association* of the United States, in March 2012 interview.

4. Henry Blodget, "The Future of Mobile," Business Insider, March 21, 2012; Jonathan Bowles and David Giles, *New Tech City*, Center for an Urban Future, May 2012.

5. Louis Basenese, "The Mobile Industry: The Biggest Tech Trend Ever," *Wall Street Daily*, July 5, 2011; Jonathan Bowles and David Giles, *New Tech City*, Center for an Urban Future, May 2012.

	All Respondents	LMI Respondents	Non-LMI Respondents
N=	239	123 (51.5%)	116 (48.5%)

Sector	N = 239	N = 123	N = 116
Retail	22.2%	34.1%	9.5%
Construction / Renovation	4.6	2.4	6.9
Manufacturing	7.5	6.5	8.6
Wholesale / Distribution	7.9	9.8	6.0
Building Services	1.3	0.8	1.7
Healthcare / Medical	2.9	2.4	3.4
Social services	1.7	0.8	2.6
Professional services	12.1	7.3	17.2
Hospitality / Leisure	7.9	8.1	7.8
Entertainment / Media	3.8	3.3	4.3
Technology	3.8	4.9	2.6
Arts & Culture	5.0	4.1	6.0
Other	19.2	15.4	23.3

Geographic Distribution	N = 239	N = 123	N = 116
Bronx	10.0%	12.2%	7.8%
Brooklyn	30.1	25.2	35.3
Manhattan	30.5	34.1	26.7
Queens	20.1	21.1	19.0
Staten Island	2.9	4.1	1.7
Other	6.3	3.3	9.5

Median Age of Firm	4 years	4 years	4 years

Median Size of Firm (Employees)	N = 239	N = 123	N = 116
Full-time	1	1	1
Part-time	2	1	2

Total Revenues	N = 238	N = 122	N = 116
Under 50K	57.3%	67.5%	46.6%
50-100K	10.0	12.2	7.8
100-250K	11.7	8.9	14.7
250-500K	10.0	6.5	13.8
500K-1M	5.0	1.6	8.6
1M-5M	4.6	2.4	6.9
5M-10M	0.0	0.0	0.0
Over 10M	0.8	0.0	1.7

Median Household Size	2	2	2

	All Respondents	LMI Respondents	Non-LMI Respondents
Total Household Income	N=239	N=123	N = 116
Under 25K	17.2%	33.3%	n/a
25-55K	34.3	66.7	n/a
55-100K	25.5	n/a	52.6%
100-150K	10.0	n/a	20.7
150-250K	7.9	n/a	16.4
Over 250K	5.0	n/a	10.3

	All Respondents	LMI Respondents	Non-LMI Respondents
How important is technology, and keeping up with new technology (e.g. software, social media, production equipment), to the success of your company?	N = 238	N = 122	N = 116
Not at all important	3.8%	6.6%	0.9%
Not very important	5.0	6.6	3.4
Somewhat important	23.9	23.0	25.0
Very important	67.2	63.9	70.7

	All Respondents	LMI Respondents	Non-LMI Respondents
Do you feel like your company uses technology to a sufficient degree to be competitive?	N = 238	N = 122	N = 116
Yes	56.3%	51.6%	61.2%
No	35.7	36.9	34.5
Not sure	8.0	11.5	4.3

	All Respondents	LMI Respondents	Non-LMI Respondents
Do you feel the use of a greater amount of technology would help you increase your sales?	N = 238	N = 122	N = 116
Yes	76.9%	75.4%	78.4%
No	11.8	13.9	9.5
Not sure	11.3	10.7	12.1

	All Respondents	LMI Respondents	Non-LMI Respondents
Do you plan adopt more technology for your business?	N = 238	N = 122	N = 116
Yes	83.2%	76.2%	90.5%
No	16.8	23.8	9.5

	All Respondents	LMI Respondents	Non-LMI Respondents
What holds you back?	N = 44	N = 29	N = 12
Cost of implementation (first choice)	51.2%	51.7%	50.0%
Lack of understanding of the technology (first choice)	29.3	37.9	8.3

	All Respondents	LMI Respondents	Non-LMI Respondents
Do you have a computer in your place of business?	N = 237	N = 122	N = 115
Yes	88.6%	81.1%	96.5%
No	11.4	18.9	3.5%

	All Respondents	LMI Respondents	Non-LMI Respondents
If you have more than one computer, is it networked?	N = 209	N = 99	N = 110
Yes	44.0%	41.4%	46.4%
No	56.0	58.6	53.6%

	All Respondents	LMI Respondents	Non-LMI Respondents
Do you have dedicated access to the Internet?	N = 209	N = 99	N = 110
Yes – High speed	94.7%	91.9%	97.3%
Yes – Dialup	1.4	2.0	0.9
Yes – via mobile phone, only	2.9	4.0	1.8
No	1.0	2.0	0.0
How do you use to store and back up your data?	N = 209	N = 99	N = 110
Backup hard drive	65.6%	59.6%	70.9%
Server	13.4	12.1	14.5
Wireless router	8.6	5.1	11.8
Cloud-based storage	31.3	20.2	40.9
Not sure	12.4	19.2	6.4
What types of software do you use?	N = 207	N = 97	N = 110
Accounting	52.7%	43.3%	60.9%
CRM – Customer relationship management	15.5	11.3	19.1
Inventory management	9.7	11.3	8.2
Cloud-based applications (e.g. Google Docs)	54.6	45.3	62.7
Spreadsheet	66.2	54.6	76.4
E-mail marketing	44.0	40.2	47.3
None of these	8.7	14.4	3.6
Do you use e-mail at your place of business?	N = 236	N = 122	N = 114
Yes	87.7%	77.9%	98.2%
No	12.3	22.1	1.8
What type of e-mail address do you have?	N = 206	N = 95	N = 111
Domain name tied to by business name	59.2%	50.5%	66.7%
Free service (e.g. G-mail, Yahoo, etc.)	32.0	38.9	26.1
ISP-provided (e.g. @verizon.net, @aol.com)	8.7	10.5	7.2
If you are a retail or hospitality business, do you use a point-of-sale (POS) system?	N = 235	N = 122	N = 113
Yes	17.4%	21.3%	13.3%
No	26.4	32.0	20.4
Not applicable (not retail or hospitality)	48.1	37.7	59.3
Not sure what a POS is	8.1	9.0	7.1
Does your business have a website?	N = 235	N = 122	N = 113
Yes	69.8%	59.0%	81.4%
No	30.2	41.1	18.6

	All Respondents	LMI Respondents	Non-LMI Respondents
If not, why not?	N = 77	N = 61	N = 24
Not necessary	33.8%	36.1%	16.7%
Too difficult to create	9.1	6.6	12.5
Too costly	14.3	154.8	8.3
Not sure where to start	32.5	29.5	29.2
Other	10.4	13.1	33.3

	All Respondents	LMI Respondents	Non-LMI Respondents
Who manages your website?	N = 163	N = 78	N = 95
In-house	64.4%	57.7%	63.2%
External consultant	29.4	29.5	26.3
Other	6.1	12.8	10.5

	All Respondents	LMI Respondents	Non-LMI Respondents
What is the biggest challenge in managing your website?	N = 163	N = 72	N = 91
The time it takes to update it	61.3%	55.6%	65.9%
Cost of maintenance	17.2	23.6	12.1
Security	1.2	1.4	1.1
Response time from external consult	3.7	4.2	3.3
Other	16.6	15.3	17.6
How is your website used for your business?	N = 162	N = 71	N = 91
For both marketing and e-commerce	40.7%	45.1%	37.4%
For marketing only (no e-commerce)	52.5	47.9	56.0
Basic contact info only / business hours	4.9	4.2	5.5
Other	1.9	2.8	1.1

	All Respondents	LMI Respondents	Non-LMI Respondents
Do you use a smartphone for your business?	N = 235	N = 122	N = 113
Yes	67.7%	56.6%	79.6%
No	32.3	43.4	20.4

	All Respondents	LMI Respondents	Non-LMI Respondents
If you use a smartphone, does it accept credit cards?	N = 158	N = 68	N = 90
Yes	24.1%	25.0%	23.3%
No	75.9	75.0	76.7

	All Respondents	LMI Respondents	Non-LMI Respondents
Do you use a social media for your business?	N = 234	N = 121	N = 113
Yes	65.0%	55.4%	75.2%
No	35.0	44.6	24.8

Business activities that you (the business owner) conduct online for your business.	All Respondents N = 234		LMI Respondents N = 121		Non-LMI Respondents N = 113	
	Yes	No	Yes	No	Yes	No
Purchase supplies online	64.1%	35.9%	52.9%	47.1%	76.1%	23.9%
Bank online	76.9	23.1	67.8	32.2	86.7	13.3
Pay e-bills	62.0	38.0	57.9	42.1	66.4	33.6
Automated payroll	23.5	76.5	15.7	84.3	31.9	68.1

	All Respondents	LMI Respondents	Non-LMI Respondents
Who is responsible for your business's technical support?	N = 228	N = 117	N = 111
N/A	4.8%	9.4%	0.0%
Myself	56.1	58.1	54.1
Staff member	8.3	4.3	12.6
External consult	15.8	15.4	16.2
Friends or family	14.0	12.0	16.2
Other	0.9	0.9	0.9

	All Respondents	LMI Respondents	Non-LMI Respondents
What are the biggest challenges you face with your company's use of technology?	N = 227	N = 116	N = 111
Response time from external tech support	7.9%	8.6%	7.2%
Lack of expertise	43.6	43.1	44.1
Service interruptions	11.0	7.8	14.4
Time to fix problems	21.1	12.9	29.7
Cost of maintaining	27.8	25.0	30.6
Cost of upgrades	30.4	31.0	29.7
Security	8.8	7.8	9.9
No challenges	16.3	19.8	12.6
Other	0.9	0.9	0.9

	All Respondents	LMI Respondents	Non-LMI Respondents
Approximately how much did you spend on technology in the past year, as a percentage of revenue?	N = 229	N = 118	N = 111
0-1%	33.2%	42.4%	23.4%
1-5%	37.6	30.5	45.0
5-10%	16.6	15.3	18.0
10-25%	6.6	5.9	7.2
Over 25%	6.1	5.9	6.3

	All Respondents	LMI Respondents	Non-LMI Respondents
In the coming year, will your TOTAL spending on technology:	N = 229	N = 118	N = 111
Remain the same	34.5%	41.5%	27.0%
Increase slightly	39.7	31.4	48.6
Increase >10%	20.1	22.9	17.1
Decrease slightly	3.9	2.5	5.4
Decrease >10%	1.7	1.7	1.8

	All Respondents	LMI Respondents	Non-LMI Respondents
In what SUB-CATEGORIES of technology, if any, do you expect to INCREASE spending on in the coming year?	N = 172	N = 82	N = 87
N/A / None	22.7%	35.3%	10.3%
Computer infrastructure	35.5	25.9	44.8
Computer software	41.9	40.0	43.7
Smartphones & applications	29.7	38.8	20.7
Marketing & e-commerce, including websites	83.1	76.5	89.7
Other	2.3	2.4	2.3