PROSYS
A PIVOT COMPANY

Smart Investment

Intel's new 'Skylake' processors promise to deliver real business benefits.

For 50 years, a concept known as "Moore's Law" has driven development in the chip-making industry. Intel co-founder Gordon Moore observed in 1965 that the number of transistors per square inch of silicon had doubled every year since the invention of the integrated circuit, and predicted that the trend would continue. In 1975 he revised his prediction to state that chip processing power would double every two years, and for the most part that expectation has held true.

Moore's Law is based upon the notion that packing more computing power into a smaller chip boosts performance and reduces costs. But the law of diminishing returns has finally caught up with Moore — Intel admitted that the cost per transistor actual-

ly increased with its introduction of 22-nanometer (nm) technology due to the complexity of the manufacturing process. The ultraviolet lithography used to create such minute chips requires accuracy down to the molecular level.

Nevertheless, Intel continues to defy the laws of physics with ever-tinier process technologies. In September, the chipmaker introduced a new line of products built upon its 14nm manufacturing process and Skylake microarchitecture. The new 6th Gen Intel Core processors are thin and lightweight yet deliver better performance, near-instantaneous wake-up times and significantly longer battery life than previous-generation processors.

"With Skylake, Intel is proving that Moore's Law has taken on a new dimension," said Tommy Whatley, VP of Advanced Services, ProSys. "Processing power is only part of the story. There is

Cover Story

growing demand for thinner chips that consume less power to support a broad range of device designs."

New Life for PCs

The 6th Gen Intel Core product line includes 48 processors across five series to support PCs, All-in-Ones, notebooks, laptops, 2-in-1s and mobile workstations. Intel is betting that the new chips will boost sales of desktop and laptop computers, which have lagged behind smartphones and other mobile devices.

"Intel contends that there are more than 500 million computers in use that are four to five years old or older," Whatley said. "Given the passage of time since their last PC upgrade, many users will want to take advantage of the significant new features of the 6th Gen Intel Core processors. Organizations will also want to take a look at Skylake as they refresh their PCs and notebooks and explore convertible devices."

The 6th Gen Intel Core processor family can also help organizations optimize their migration to Microsoft's new Windows 10 operating system. The Skylake chips promote a more seamless and natural interaction with technology through integration with Cortana, Microsoft's new intelligent personal assistant, and Windows Hello, a biometric login feature.

"Enterprise security teams will be interested in True Key facial recognition, which will be available on laptops, tablets and convertible devices. It uses Intel's RealSense 3-D cameras and Windows Hello to enable secure login by recognizing a user's face," said Whatley.

The 6th Gen Intel Core platform also advances Intel's "no wires" initiative with Intel WiDi (Wireless Display) or Pro WiDi. This technology allows

The 'Tick-Tock' Stops Here

The 14nm manufacturing process that serves as the basis for Intel's new Skylake processors was introduced last year with its Broadwell chips. The Skylake microarchitecture is designed to take advantage of the Broadwell process technology to increase performance. This strategy of introducing a new process technology in one chip family followed by a new microarchitecture in the next is known as the "tick-tock" development cycle.

Skylake is expected to be the last chip family to follow the tick-tock strategy, as Intel plans to retain the 14nm process for its next release of chips. Introduction of the 10nm process technology has been delayed until at least 2017.

people to easily share from their computer to a TV, monitor or projector without the mess of wires and dongles.

Smaller, Faster

The new generation of Intel processors features several firsts for mobile designs, including a new quad-core Intel Core i5 processor that offers up to 60 percent better mobile multitasking, and the Intel Xeon E3 processor family for mobile workstations. New Intel Speed Shift technology improves the responsiveness of mobile systems by moving control of P-states (performance states) from the operating system to the chip itself. P-states tell the chip to change frequencies in order to balance power consumption and performance.

"For several years, Intel has been focused on reducing power consumption so that its chips can be used in more devices," Whatley said. "Skylake processors range from 95 watts for desktops down to 4.5 watts for tablets

and ultralights in a smaller, lighter form factor."

In addition, Skylake is enabling more devices to take advantage of the Thunderbolt 3 technology for USB–C, providing 40Gbps connectivity and power for USB devices, docking stations and displays. Thunderbolt 3 also provides peer-to-peer 10GbE for fast file transfers between computers and shared storage.

Intel plans to deliver 48 more processors in the coming months, including 6th Gen Intel vPro processors for business. Intel will also be offering more than 25 products for the Internet of Things targeted at the retail, medical, industrial and security sectors.

"Intel's Skylake technology will improve the performance of servers, desktops, mobile platforms, network gear and a wide range of other devices," said Whatley. "We may be reaching the practical limits of Moore's Law, but Intel is proving that it can still deliver innovative technologies that enhance the computing experience."

News Briefs

BYOD Fueling Managed Security Growth

The global market for managed security services will grow at an annual rate of 11 percent through 2019 in response to the increasing adoption of bring-your-own-device (BYOD) policies, according to a report from research firm Technavio.

BYOD policies enable employees to use personal devices such as laptops, smartphones, tablets and desktops for official purposes. Organizations have recognized that this can reduce capital expenses for technology investments, while also increasing productivity by enabling employees to work without any time or location constraints.

However, the loss of organizational control over devices can also create security risks.

"The increased use of mobile apps … can increase the possibility of malware that may lead to loss of organizational data," said Faisal Ghaus, Vice President, Technavio. "Hence, the need for security solutions to securely manage business data, applications and services has evolved."

The Technavio report also emphasizes the demand for cloud-based services, which is increasing due to the advantages offered by cloud-based security.

"Limited budget and lack of expertise and resources are compelling companies to adopt cost-effective cloud-based IT securities that offer around-the-clock monitoring of the system," said Ghaus.

Interfaces Evolving Rapidly, Firm Says

The evolution of innovative user interface (UI) technologies and applications is taking human-machine interaction to new heights, according to a recent report from Frost & Sullivan. The research firm says technologies such as gesture recognition, image recognition and natural language processing (NLP) are facilitating a shift from traditional text- and graphics-based UIs.

"UI technologies are already radically simplifying the way humans interact with machines," said Frost & Sullivan Analyst Debarun Guha Thakurta. "Moreover, innovations in these technologies are facilitating the transition to an age of smart devices by making effortless and successful interactions with machines possible."

Currently, the prime focus among UI innovators is to overcome challenges pertaining to efficiency, conciseness, intelligence, responsiveness and attractiveness. Efforts are geared toward the development of UIs that are simple, accurate, clear, consistent and user-friendly for carrying out complex interactions.

"Technologies such as NLP, computer vision, machine learning and cloud computing could converge to fuel innovations aimed at improving the way humans interact with machines," said Thakurta. "With the accelerating trend of making intelligent machines that can think and learn like humans, UIs that interact exactly like humans will soon surface."

ProSys locations

Atlanta, GA (Headquarters)
Phone: 678-268-1300
Toll-Free: 888-337-2626
chash@prosysis.com

Atlanta, GA (Integration Center)
Phone: 678-268-9000
Toll Free: 888-337-2626
twheless@prosysis.com

Austin, TX
Phone: 512-658-5847
Toll Free: 888-337-2626
jwestmoreland@prosysis.com

Birmingham/Montgomery, AL
Phone: 205-314-5746
Toll-Free: 800-863-9778
birminghamsales@prosysis.com

The Carolinas
Toll-Free: 888-337-2626
chash@prosysis.com

Knoxville, TN
Phone: 865-310-8843
Toll-Free: 800-863-9778
pmadden@prosysis.com

Lexington, KY
Phone: 859-887-1023
Toll-Free: 800-863-9778
dclemmons@prosysis.com

Louisville, KY
Phone: 502-719-2101
Toll-Free: 800-863-9778
dclemmons@prosysis.com

Miami, FL
Phone: 305-256-8382
Toll-Free: 800-891-8123
lspivack@prosysis.com

Mid-Atlantic
Phone: 800-634-2588 ext 2
midatlantic@prosysis.com

Nashville, TN
Phone: 615-301-5200
Toll-Free: 800-863-9778
dclemmons@prosysis.com

New England
Toll Free: 800-634-2588 ext 1
newengland@prosysis.com

New York/Metro
Toll Free: 800-634-2588 ext 3
nymetro@prosysis.com

Seattle
Phone: 425-939-0342
sballantyne@prosysis.com

Tampa, FL
Phone: 813-440-2410
800-891-8123
lspivack@prosysis.com

POS Possibilities

Data gleaned from point-of-sales systems deliver myriad benefits.

Consumers have rapidly embraced the speed, convenience and payment flexibility delivered by network-based point-of-sale (POS) systems. In turn, organizations in a growing number of business sectors are finding that these systems can deliver valuable insights into the customer experience, inventory management, sales patterns and more.

Data collected during electronic transactions can help retailers and suppliers ensure that they get the right product in the right store at the right time. When properly gathered and analyzed, POS data is capable of delivering real-time insights into customer satisfaction, quality of service, sales trends, and the performance of the retailer.

Studies indicate the insight gained from POS analytics may be critical to customer loyalty. The IBM Institute for Business Value recently analyzed four years of survey data from 110,000 consumers in 19 countries and found that consumer expectations are increasingly shaped by online shopping experiences — particularly in terms of product inventory. Online shoppers are accustomed to getting what they want when they want it, and they carry that expectation to brick-and-mortar stores.

Customer Satisfaction

Surveyed consumers said out-of-stock situations are becoming much less acceptable. Sixty percent said it is important for them to be able to find out if an item is in stock before going to the store, and 46 percent said it's important that store employees use mobile devices to fix an out-of-stock issue.

Consumers also said they want personalized communication. When in the store, 44 percent said they want on-demand communication about sales and specials. Forty-one percent said they want personalized promotions based upon their purchase history or preferences.

"IBM's study identifies a significant gap between what shoppers want from retailers and what they are getting today," said Sarah Diamond, General Manager, IBM Global Business Services. "Retailers may not be doing enough to meet consumer expectations shaped by digital experiences outside of retail -- from location-based services to preference-based apps. The good news is that this gap also indicates the potential of growth for retailers who can meet those consumer expectations."

While the IBM study focused on retail POS data, wholesalers and suppliers place a high value

on such information as well. POS analytics help them build more accurate forecasts and improve warehouse efficiency to help ensure they can meet customer demand. Organizations in a wide range of sectors, including healthcare, entertainment, fashion, food service, hospitality, gaming, manufacturing and more, are extracting insight from POS-driven applications.

Gaining Insight

POS technology's advanced capabilities make it possible to extract valuable data from every transaction. This data can be used for everything from sales forecasting and inventory replenishment to operations optimization and marketing strategy. Sales data, profit margins, discounts, store performance, purchasing behaviors, customer loyalty, and other information from any number of POS devices can be instantly viewed through a management interface and processed with data analytics software.

The first POS analytics solutions to hit the market were primarily add-ons to larger business intelligence products. Because they were based on traditional databases and required batch processing and spreadsheet analytics, they tended to be too complex for most line-of-business employees to use.

Today's top POS solutions feature preconfigured analytics that help users slice and dice data sources without assistance from the IT department. With a robust POS analytics package, business users can extract meaning from data, providing insight into market trends and customer habits that can help identify cost-cutting ideas, uncover new business opportunities, develop cross-over sales leads, react quickly to retail demand, optimize prices and more.

Consumers Worry About Data Security

Consumers are not particularly confident that U.S. retailers will keep their personal data secure, according to a recent survey.

When asked about the likelihood that their personal data held by a retailer would be accessed by an unauthorized person within the next year, 44 percent of U.S. respondents said they believed a breach was likely, and only 19 percent said it was unlikely.

"Organizations that hold consumers' personal data have a major challenge maintaining public confidence that they safely protect private information," said Dave Frymier, chief information security officer for Unisys, which conducted the survey.

Mission-Critical Cloud

More organizations seeking to move core business apps into the cloud.

It hasn't taken long for the cloud to evolve into an integral part of the enterprise computing infrastructure. Just a few years after organizations began tentative experiments with cloud-based storage and file-sharing services, they now routinely use the cloud for testing and development environments.

The next link in the cloud's value chain is with mission-critical applications. Do organizations trust the cloud ecosystem to host apps central to essential business operations?

Industry analysts are convinced they do. Based on results of a 10-nation study, Gartner says organizations are progressively turning to cloud-based deployment models such as Software as a Service (SaaS) for running mission-critical workloads.

"We've seen a real transition from use cases in previous surveys where early SaaS adoption focused on smaller pilot projects," said Joanne Correia, research vice president at Gartner. "Today, the projects are mission-critical and production grade. This is an affirmation that more businesses are comfortable with cloud deployments beyond the front office running sales force automation and email."

Cost Considerations

This is a fairly new development. As recently as 2013, industry surveys routinely showed that up to 90 percent of IT decision-makers considered it important to keep core business applications and workloads running inside the data center. That perception has shifted dramatically, as illustrated by a recent Forrester Research survey which found that 81 percent of organizations are either using or planning to use mission-critical apps in the cloud within the next two years.

Cost reduction is one compelling reason to move mission-critical apps to the cloud. It is generally accepted that one-third of enterprise IT budgets are spent on application management. That isn't surprising considering large organizations typically run hundreds or thousands of applications — and they are continually adding new applications to gain business and operational efficiency. New applications place additional strain on network and server resources, and often demand extra storage capacity.

Shifting mission-critical apps such as Microsoft Exchange, SQL Server, SAP and Oracle Database to top-tier cloud providers offers relief. Application management costs become predictable, and core staff are freed to pursue more business-enhancing activities. Maintenance costs are shifted to the cloud provider and upgrades become seamless and painless.

Software licensing costs also can be reduced significantly in the cloud, where licensing is often based on a pay-as-you-go or monthly subscription model, rather than on a per-user or per-server model. Cloud platforms often leverage open-source technologies such as Open-Stack, Linux and KVM to meet the needs of core apps while slashing the hardware, licensing and support costs associated with traditional on-premises deployments.

Migrating Custom Apps

"Homegrown" legacy applications can present special migration considerations. Some industry surveys show that as much as 40 percent of enterprise apps are custom-built for specific business requirements, based on older operating systems and hardware, and require frequent re-engineering. For these reasons, organizations tend to be reluctant to shift custom apps to the cloud.

However, some of these apps are ticking time bombs. While they have served a useful purpose for years, they require operating systems and hardware that aren't going to be supported forever. What's more, they may have been developed using old programming that only employees nearing retirement can still support. The cloud offers an opportunity to upgrade the application while reducing management costs and simplifying support requirements.

Cloud providers frequently offer the enterprise-class framework, tools and services to simplify migration. In some cases, this could involve re-hosting the application and its components without making changes. In other cases, it might be better to rebuild the app in a cloud environment using modern frameworks such as Java or .NET to make it more resilient. Finally, there may be instances in which the legacy app could simply be replaced altogether using a commodity SaaS offering that will deliver improved functionality with the added advantage of automated updates.

Eye on Agility

While the cloud delivers significant cost advantages, this is no longer the driving force behind adoption. In the Forrester survey, 77 percent of respondents identified improved agility as the key motive for moving core apps to the cloud.

One of the key ways cloud enhances application agility is by allowing developers to conceive, develop, test and release new code rapidly. In traditional "waterfall" development, teams gather all known requirements for the application, develop all elements and finally test the app before release. That not only takes a long time, but it forces the development team to go back to square one when errors are found. In the cloud, organizations can rapidly create multiple virtual test environments without dependencies on backend systems and data stores. Developer teams can test often throughout the development lifecycle without worrying about data or service availability, quickly adding new features, changing functionality or making bug fixes.

The ultimate goal of agile testing is to speed the process of getting high-quality code into production, giving organizations faster access to new apps that can drive productivity and business efficiency. Because cloud resources can be quickly added, applications can be dynamically scaled up or down without excessive administrative overhead.

Cloud providers can also quickly spin up application servers, storage and databases to provide rapid provisioning of scale-out architecture for data-intensive applications such as big-data analytics and business intelligence. Using simple subscription-based tools, organizations can plug into disparate data sources and create useful queries without having to know a database programming language.

Even the early skeptics would have to agree that the cloud model has enabled enterprises to increase productivity, improve data access, cut capital costs and more. The trend toward cloud-enabling mission-critical applications could open the door for even greater benefits. Automated upgrades, modernized code, streamlined management, improved scalability and increased availability all contribute to a more stable, robust and reliable application environment that can deliver competitive advantage.

Cloud Infrastructure Investments Growing

Total cloud IT infrastructure spending — including servers, storage and Ethernet switches — will grow by 26.4 percent this year to reach $33.4 billion, accounting for a third of all IT infrastructure spending, according to the International Data Corporation (IDC) Worldwide Quarterly Cloud IT Infrastructure Tracker.

IDC says private cloud IT infrastructure spending will grow by 16.8 percent year over year to $11.7 billion, while public cloud IT infrastructure spending will grow by 32.2 percent in 2015 to $21.7 billion. In comparison, spending on non-cloud IT infrastructure will remain flat at $67 billion.

IDC expects that spending on cloud IT infrastructure will grow across all regions and all technologies. In most regions, growth in public cloud IT infrastructure spending will exceed growth in spending on private cloud IT infrastructure as public cloud service providers will continue to invest in expansion of their data centers and service offerings.

For the five-year forecast period, IDC expects that cloud IT infrastructure spending will grow at a compound annual growth rate (CAGR) of 15.6 percent and will reach $54.6 billion by 2019, accounting for 46.5 percent of the total spending on IT infrastructure. At the same time, spending on non-cloud IT infrastructure will decline at a -1.4 percent CAGR. Spending on public cloud IT infrastructure will grow at a slightly higher rate than spending on private cloud IT infrastructure. In 2019, IDC expects cloud service providers will spend $35.3 billion on IT infrastructure for delivering public cloud services, while spending on private cloud IT infrastructure will reach $19.2 billion.

INTRODUCING OUR BEST PROCESSOR EVER

The 6th Generation Intel® Core™ processor comes packed with advanced features to boost productivity, creative potential, and open your world to endless possibilities. With features such as instant wake up and faster data transfer rates, you get more time to learn, create, work, and play. In other words, you get limitless potential.

The 6th Gen Intel Core processor family is also our most scalable processor family ever, enabling a diverse range of form factors to meet every lifestyle and work style – from compute sticks, tablets, ultra-thin 2- in-1 detachables and convertibles, sleek Ultrabooks™ and clamshell notebooks to All-in-One desktop PCs, mini desktops, workstations and gaming systems.

Contact your ProSys representative to learn more.

www.prosysis.com
888-337-2626

PROSYS
A PIVOT COMPANY