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# BDO TECH

## REVENUE FROM CONTRACTS WITH CUSTOMERS – HARDWARE COMPANIES

By Slade Fester

### OVERVIEW

In May 2014, the FASB issued ASU 2014-09, *Revenue from Contracts with Customers*. ASU 2014-09 establishes comprehensive accounting guidance for revenue recognition and will replace substantially all existing U.S. GAAP on this topic. ASU 2014-09 is converged with IFRS 15, the comparable new standard issued by the IASB.

The revenue standard's core principle is built on the contract between a vendor and a customer for the provision of goods and services. It utilizes the transfer of control between the parties to determine the pattern of revenue recognition based on the consideration to which the vendor is entitled.

To accomplish this objective, the standard requires five basic steps:

1. Identify the contract with the customer.
2. Identify the performance obligations in the contract.
3. Determine the transaction price.
4. Allocate the transaction price to the performance obligations in the contract.
5. Recognize revenue when (or as) the entity satisfies a performance obligation.

Many entities adopting the new standard may experience a change in the timing and manner of revenue recognition. For some transactions, the changes could be significant and will require careful planning.

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### DID YOU KNOW...

In August, German chip-maker Infineon Technologies agreed to acquire International Rectifier for $3 billion. The deal follows another $3 billion in chip industry deals already announced this year and points to a consolidation trend, according to ***Investor's Business Daily***.

Sales in China's semiconductor industry reached $9.6 billion in Q1, a 13.4 percent increase over the same period last year, according to the ***China Semiconductor Industry Association***.

The ***Semiconductor Industry Association*** reports that global semiconductor sales totaled $82.7 billion in Q2, up 10.8 percent from 2013.

***IDC*** reports that consumers and businesses will buy nearly 112 million wearable computer devices by 2018, marking a 78.4 percent growth rate from 2014's predicted sales.

According to ***Dice.com***, Texas, Florida and North Carolina are the top three states for technology industry job growth.

Microsoft reported a 49 percent revenue increase in Computer and Gaming Hardware sales totaling $9.6 billion this year, according to ***Tech Times***.

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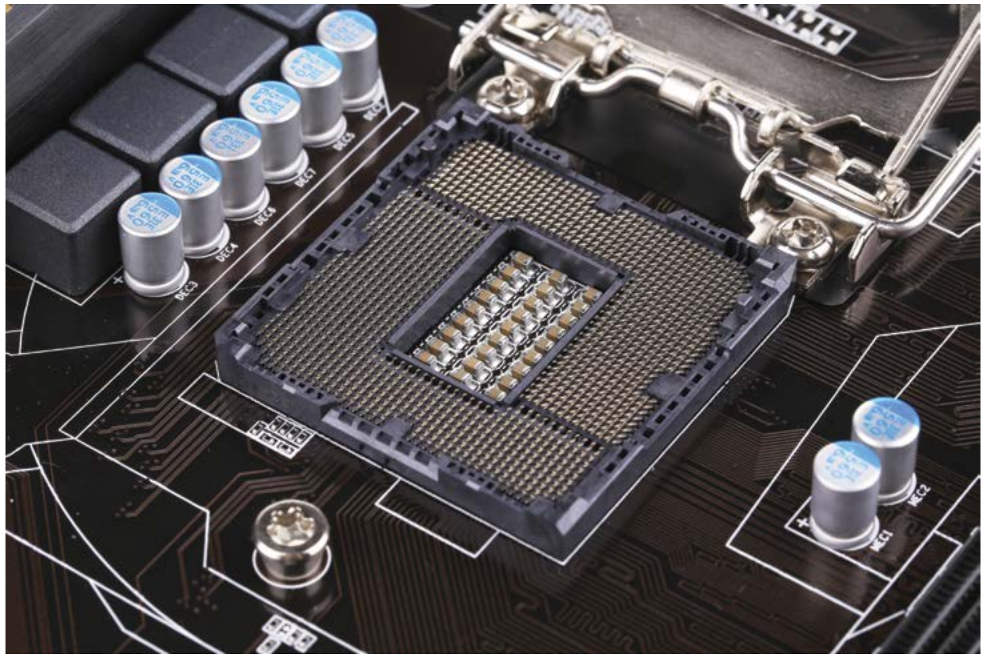
## REVENUE FROM CONTRACTS WITH CUSTOMERS

### ▶EFFECTIVE DATE

Public entities[1] will apply the new standard for annual periods beginning after Dec. 15, 2016, including interim periods therein. Early adoption is prohibited. Therefore, a calendar year-end public entity would reflect the new standard in its first quarter ended March 31, 2017, each subsequent quarter and also in the year ended Dec. 31, 2017.



Nonpublic entities have an additional year to adopt, i.e., the new standard applies for annual periods beginning after Dec. 15, 2017. In addition, the new standard is effective for interim periods within annual periods that begin after Dec. 15, 2018. Therefore, a calendar year-end nonpublic entity would first apply the new standard for the year ended Dec. 31, 2018. If it also prepares interim financial statements, the new standard would first take effect for those interim periods in 2019.

However, nonpublic entities are allowed to adopt the new standard early as follows, if they choose to do so:

- The new requirements may be applied no earlier than an annual reporting period beginning after Dec. 15, 2016, including interim reporting periods within that period. This would mirror the effective date for public entities.
- They may be applied for annual reporting periods beginning after Dec. 15, 2016, and interim periods within annual periods beginning after Dec. 15, 2017. In other words, calendar year-end nonpublic entities would apply the new standard for the year ended Dec. 31, 2017. Interim periods would first reflect the new standard in the following year, e.g., the first quarter ended March 31, 2018.
- They may be applied for an annual reporting period beginning after Dec. 15, 2017, including interim periods within that period. In this scenario, calendar year-end nonpublic entities would apply the new standard to the year ended Dec. 31, 2018. Interim periods in that year would also reflect the new standard, e.g., the first quarter ended March 31, 2018.

### ▶HARDWARE COMPANIES – INDUSTRY CONSIDERATIONS

**Potential elimination of sell-through revenue recognition** – Selling through distributors is prevalent in the technology sector. Under current U.S. GAAP, many companies that utilize distributors in their selling efforts recognize revenue when the product is sold by the distributor to the end customer because of the companies' inability to estimate returns, price concessions and reserves (e.g., for stock rotation). The new revenue standard requires technology companies to recognize revenue when control transfers, and to incorporate returns and concessions in the formulation of an estimate of the transaction price, subject to a constraint described below. Under the new standard, many technology companies are likely to see an acceleration of revenue recognition because the price does not have to be fixed or determinable, as compared to current guidance.

**Separately priced product warranties allocated based on relative stand-alone selling price instead of contractual price** – The new standard differentiates between a warranty that a customer has an option to purchase separately and a warranty that a customer cannot purchase separately. A warranty that is sold separately is accounted for as a separate performance obligation that is recognized over the warranty period, which is similar to existing guidance. However, the arrangement consideration in separately priced warranty contracts is allocated based on its relative stand-alone selling price under the new guidance rather than its contractual price, as is the case under current U.S. GAAP. Under the new standard, a warranty that is not sold separately could still represent a separate performance obligation if there is a service component to the arrangement in addition to the assurance that the product will perform according to specifications. In assessing whether a contract contains a service in addition to the assurance that the product complies with agreed-upon specifications, a vendor considers factors such as whether the warranty is required by law, the length of the warranty coverage period and the nature of the tasks that the vendor promises to perform. Warranties that only provide a customer with the assurance that the product will function as intended because it complies with agreed-upon specifications are accounted for in accordance with existing guidance on product warranties.

**Certain service performance obligations may be recognized over time instead of a point in time on final delivery** – Many hardware companies provide contract

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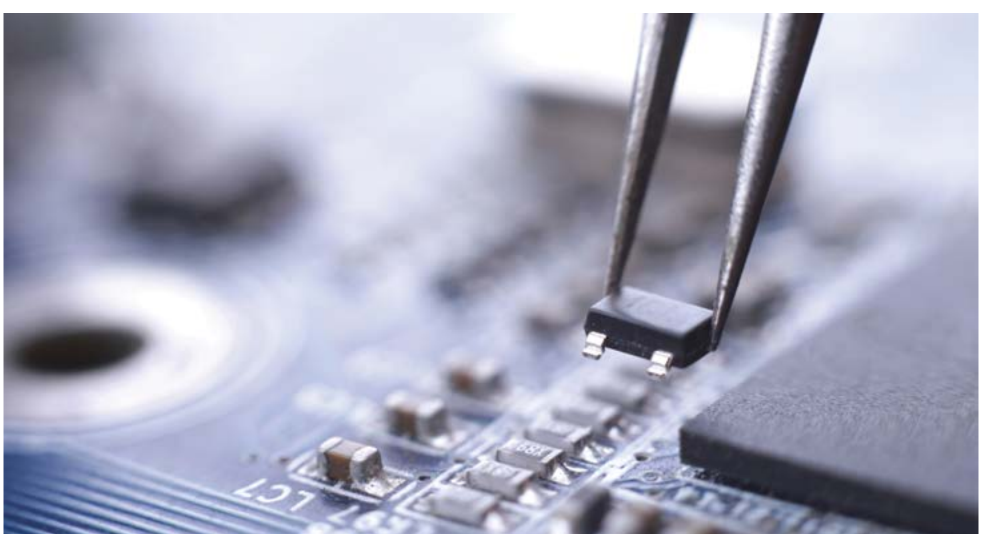
## REVENUE FROM CONTRACTS WITH CUSTOMERS

manufacturing and other service performance obligations over time but do not deliver the manufactured product until a later point in time. Under the new standard, revenue is recognized over time when there is a reasonable measure of progress toward completion of the performance obligation and certain other criteria are met; otherwise revenue is recognized at a point in time when control transfers. For example, in a situation where custom manufacturing services are being performed and compensated with nonrefundable payments for performance completed to date over the life of a contract, under the new standard, revenue is recognized over time as the goods are produced even though title of the product or equipment does not transfer until the end of the contract period.

**Additional performance obligations may arise and impact the timing of revenue recognition** – Some hardware companies routinely credit or replace damaged or lost goods for customers even if sold under FOB shipping point terms. As such, the customer is shielded from loss in a manner similar to when the shipping terms are FOB destination. Under the new guidance, covering the risk of loss while goods are in transit could indicate an additional performance obligation from the product sale. Assuming other recognition criteria are met, revenue allocated to the product sale is recognized at a point in time (i.e., upon shipment) while revenue allocated to the risk of loss is recognized over time (i.e., during the shipping period). Under existing guidance and the "risk and rewards" model, revenue from such an arrangement is typically deferred until product is delivered to the customer.

**Variable (contingent) consideration can now be recognized** – Variable consideration, if any, must be estimated throughout the life of a contract, whereas contingent revenue was generally excluded from the allocation of revenue under current U.S. GAAP in a multiple-element arrangement. The new standard requires the estimate of variable consideration to be determined at the onset of an arrangement and throughout the life of the contract. The consideration will be allocated to performance obligations and recognized as the obligations are satisfied. The estimate of variable consideration can be developed using a probability-weighted approach addressing a range of possible scenarios, or by estimating the single most likely amount, such as whether an entity either achieves a bonus or does not. However, the amount included in the transaction price is subject to a constraint, such that it includes only those amounts for which it is probable that a significant reversal of revenue will not occur when the uncertainty is resolved. Additionally, there is one exception to this rule. The boards concluded that variable consideration related to a license of intellectual property (e.g., royalties) will not be estimated at the onset of the arrangement due to specific exceptions for sales and usage based royalties for intellectual property (IP) but shall be recognized when the subsequent sales or usage occurs.



**Standard recognition for license and other IP** – Hardware companies often license IP for use in another company's product. Aside from industry-specific guidance for software, current U.S. GAAP is unclear as to when revenue for other IP licenses should be recognized—either at a point in time or over time. Under the new standard, assuming that the license is distinct from other performance obligations in the arrangement, revenue from license transactions should be recognized over time if an entity is determined to be providing access to its IP as it exists throughout the license period (a dynamic license). Conversely, license revenue should be recognized at a point in time if the entity is providing its customer with the right to use its IP as it exists at the time the license is granted (a static license).

**Contract costs may be capitalized more frequently than under current U.S. GAAP** – Currently under SAB 104, companies are permitted to make a policy election as to whether to expense or capitalize certain contract costs. However, the ASU requires capitalizing contract acquisition costs, such as a sales commission, assuming the costs are recoverable. As an alternative, acquisition costs may be expensed immediately if they would otherwise be fully amortized within one year. In addition, contract fulfilment costs would be capitalized if they relate directly to a specific contract, generate or enhance resources that will be used to satisfy performance obligations and are recoverable. This assumes such costs are not addressed by other applicable literature, such as that related to inventory.

**Judgments and estimates and extensive disclosures of underlying assumptions are key** – The new standard requires extensive disclosures that will highlight the significant judgments and estimates required of management to determine the amount of revenue to recognize. Historically, disclosures about revenue were limited, having been developed in a piecemeal fashion over time. The new disclosures have been designed to complement the new five-step model for recognizing revenue and should standardize the information that users of the financial statements receive.

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## REVENUE FROM CONTRACTS

### TRANSITION METHODS

For both public and nonpublic entities, a full retrospective approach is available, under which entities may avail themselves of certain practical expedients. If a retrospective approach is not applied, then entities will use a cumulative effect approach. More specifically:

1. A full retrospective approach would apply the default method of adopting new accounting standards in Topic 250. Each prior period presented would follow the guidance in paragraphs 250-10-45-5 through 45-10.
2. Similarly, a retrospective approach can be used in conjunction with up to three forms of practical relief. That is, entities can choose to use one, two or all three of the following accommodations:
   - (i) Contracts that begin and end in the same annual reporting period would not need to be restated under the new revenue recognition standard.
   - (ii) Contracts that contain variable consideration can use hindsight. That is, entities are allowed to use the final transaction price at the date the contract was actually completed, rather than estimating the variable consideration at inception.
   - (iii) Entities are not required to disclose the amount of a contract's transaction price that was allocated to the remaining performance obligations or an explanation of when those obligations are expected to be recognized as revenue for reporting periods presented before the date of adoption.

Under the cumulative effect approach, an entity would apply the new revenue standard only to contracts that are incomplete under legacy U.S. GAAP at the date of initial application (e.g., Jan. 1, 2017, for a calendar year-end public company) and recognize the cumulative effect of the new standard as an adjustment to the opening balance of retained earnings. That is, prior years would not be restated. However, additional disclosures would be required to enable users of the financial statements to understand the impact of adopting the new standard in the current year compared to prior years that are presented under legacy U.S. GAAP.

## PErspective in Hardware

Private investment in the technology industry seems to be making a comeback. As reported by *The Wall Street Journal*, the industry will likely see its strongest year in private equity deals since 2007 and, as of July 2014, there have been 40 buyouts of technology companies year-to-date, according to Dealogic. For comparison, the annual number of deals in this sector has typically hovered around 60 ever since a low of 29 deals in 2009.

Renewed private equity interest in the hardware sector is creating more opportunities for capital infusions from private investments in hardware companies that offer innovative solutions. The stage was set by the $25 billion private takeover of Dell by founder Michael Dell and private equity firm Silver Lake in late 2013. According to *CIO Magazine*, the move allowed Michael Dell to make a number of additional investments in software technologies and startups to shift the company into one that offers crossover solutions and better meets consumer demands—ultimately reinventing itself for success.

While the hardware sector has experienced some challenges, there are a number of factors contributing to a more positive outlook for investment. One such factor is the steady introduction of new technologies and advances of old ones. Research firm IBISWorld noted that there are four computer hardware subsectors whose prices are not following the trend of decline—programmable logic controllers, graphics and accelerator cards, intercom systems and network switches. In fact, the prices in these four subsectors are expected to grow moderately through 2017. Another factor having a positive effect on investment in the hardware sector is a greater interest in cross-border deals involving technology firms. Increasingly, U.S. hardware companies are among targets for capital injections from China-based firms. According to a recent *TechCrunch* article and data from the Rhodium Group, Chinese firms have invested about $6 billion in U.S.-based technology companies year-to-date. Finally, the technology industry is well positioned for further mergers and acquisitions (M&A) activity. *Computerworld UK* reported that improving economic conditions have led to an increase in technology company credit ratings, which, in turn, drives up both the metrics that determine valuation and the prices of assets. This has led, and will likely continue to lead, many technology and innovative hardware companies to be put up for sale or recapitalized.

*PErspective in Hardware is a feature examining the role of private equity in the Hardware industry.*

### NEXT STEPS FOR MANAGEMENT

**Assess the impact** – Management should begin evaluating the potential impact of the new standard on each specific revenue stream of the entity. To initiate this process financial reporting professionals should be trained in the new standard.

**Follow developments on the new standard** – Monitor the activities of the AICPA and the joint FASB/IASB Transition Resource Group. This may be particularly relevant for matters involving a high degree of judgment, where previous U.S. GAAP may have been more prescriptive.

**Select a transition method** – Management should begin considering the available transition methods. Conversations with the company's financial statement users and also peer companies may be useful for this purpose. Further, the SEC staff is expected to address how transition under the new standard will affect the five-year selected financial data table for SEC registrants.

**Develop SAB 74[2] disclosures** – Public entities will need to begin drafting SAB 74 disclosures about the anticipated effect of the new pronouncement. While these disclosures will become more specific over time, the SEC staff has informally indicated it expects entities to disclose their chosen method of transition

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## REVENUE FROM CONTRACTS

in the period that a decision is reached, which will vary across entities. See our SAB 74 Flash Report for an example. Likewise, SEC registrants should remain alert for any changes to SAB 104, including a possible rescission. The SEC staff has not yet indicated what its plans are on this point.

**Investor communications** – Management and boards will need to anticipate the effect on earnings in order to set expectations for investors, lenders, analysts and other stakeholders.

**Debt covenants** – Management may need to discuss similar changes with lenders to revise debt covenants that are impacted by revenue, such as EBITDA and times-interest earned ratios.

**Contract terms** – Management may consider possible changes to its standard contracts.

**Income taxes** – The changes in timing of revenue recognition may result in changes in current taxable income since many entities use U.S. GAAP to determine revenue recognition for income tax purposes. The new standard may also impact an entity's deferred taxes. Since an entity's income tax accounting depends on specific facts and circumstances, consultation with a tax advisor may be useful.

**Internal controls** – Management, particularly of public companies, will likely need to revise documented processes and controls to ensure they are sufficient to prevent or detect misstatements under the new guidance. Further, public entities must report changes in the entity's internal controls in the period they occur.

**Compensation and other revenue-based metrics** – Management may consider possible changes to compensation arrangements that are driven by revenue if the timing or pattern of the entity's revenue recognition changes under the new guidance.

**Judgments and estimates** – In some situations, management will be required to make more estimates and use more judgment than under current guidance, such as estimates related to variable consideration discussed above. Those matters will be highlighted for users through increased disclosure requirements.

# QUICK TIPS FROM TIECON 2014

## HOW TO ACHIEVE AND SUSTAIN GLOBAL SCALE

**Aftab Jamil, partner and leader of BDO's Technology & Life Sciences practice**, spoke with **Atul Bhatnagar, President and CEO of Cambium Networks**, at TiEcon 2014 in California, one of the largest conventions in the world dedicated to entrepreneurs. The discussion between Aftab and Atul outlined the key factors entrepreneurs in the technology industry should consider on the path to global expansion.

According to Atul, the entrepreneurial path is very demanding, and entrepreneurs will experience the highest of highs and the lowest of lows throughout their journey to success. Here are quick tips for entrepreneurs to stay on track and achieve success in launching and scaling up their businesses:

**Prepare.** Preparation is critical and consists of three important components: strong energy, strong execution and high ethics.

**Expand your horizons.** Entrepreneurs should be voracious readers—from books, to domestic and international news. They should surround themselves with global figures and thinkers as well as travel to different regions to meet with their customers.

**Listen to people.** Spend time with different customers to learn about their needs and cultural diversity.

**Remember that EQ is as important as IQ.** Emotional quotient is equally as important as intellectual quotient. With a high EQ, entrepreneurs can provide a more thoughtful approach to address business and customer issues—and intuition will become stronger if their EQ is as strong as their IQ.

**Be a coach and mentor—not a manager.** To be an effective and genuine leader, entrepreneurs should think of themselves as teachers and work as a team to achieve and be accountable for the same vision. Leaders should think: "low ego, high accomplishment."

**Learn from your mistakes.** Entrepreneurs shouldn't get sidetracked by failures and instead take each mistake as a learning experience.

**Follow the three Ps to global expansion.** People, products and processes. Entrepreneurs should always lead people with passion, create products that have phenomenal disruption and develop processes to scale globally.

As entrepreneurs contend with the challenges of starting a new business, they should remember that certain intangible qualities such as dedication, passion and perseverance can help them achieve long-term success.

For more advice on entrepreneurship, you can find the full interview here.

[1] A "public entity" is one that meets the definition of a "public business entity" in the ASC Master Glossary, as defined in ASU 2013-12. Under ASU 2014-09, "not-for-profit" entities that have issued (or are conduit bond obligors for) certain securities will apply the same effective date as public business entities. Employee benefit plans that file or furnish financial statements with the SEC are also considered public. All other entities are considered "non-public" under the new revenue recognition standard.

[2] *Disclosure Of The Impact That Recently Issued Accounting Standards Will Have On The Financial Statements Of The Registrant When Adopted In A Future Period*

*Additional resources are available on BDO's Revenue Recognition Resource Center, including an in-depth publication with examples and practical considerations. To discuss these matters, please contact: Slade Fester, partner and leader of the Hardware practice at BDO. He can be reached at sfester@bdo.com or 408-352-1951.*

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# IXYS CORPORATION: IMPROVING POWER MANAGEMENT, ONE WATT AT A TIME

## Q&A with Uzi Sasson, President and CFO of IXYS Corporation

**BDO:** ***Can you tell us more about IXYS Corporation and the company's objectives?***

**Uzi:** When many companies tout power efficiency, they measure in milliwatts. The savings they achieve in one year, we save in one second. This is the basic tenet of IXYS Corporation. Since its Silicon Valley inception in 1983, IXYS, a global power semiconductor and integrated circuit company, has been introducing technology-driven products to improve power conversion efficiency, generate clean energy, enhance automation and advance products in the industrial, medical and telecom industries. IXYS is a worldwide pioneer in the development of power semiconductors, integrated circuits and microcontrollers that effectively manage electrical voltage to produce maximum effect with the least expenditure of energy. Today, the company is comprised of 14 divisions and more than 1,000 employees, serving more than 3,500 customers globally.

**BDO:** ***What are the top two to three challenges that the industry is currently facing?***

**Uzi:** In the commodity semiconductor market, the challenge is always the same: who can make the smallest, fastest, cheapest chip that is the most technologically advanced. Many competing entities (typically in the consumer/computer market) are under pressure to come up with state-of-the-art chip designs that may become obsolete six months later. Thankfully, IXYS doesn't play in this space.

Instead, IXYS is one of the few pure-play ***power*** semiconductor companies, specializing in power management from 100 watts all the way to the megawatt range. Solely focused on the $20 billion electrical power market, IXYS' product portfolio addresses nearly 90 percent of the overall power spectrum. We are one of the main suppliers of high power semiconductors to telecom base stations, servers, industrial equipment and motor drives. We have the largest market share in insulated gate bipolar transistors (IGBTs) used in portable heart defibrillators. We have collaborated with electric cars on each evolution/design and have added specialized chips to handle automotive electrical components (navigation, lights). The list goes on. In recent years, we have added substantially to our power management and microcontroller offerings, as well as inverter components for wind/solar energy.

At IXYS, we strive to address the challenges associated with 1) diminishing natural resources, 2) increased demand for cheap energy and 3) environmental directives for energy efficiency and reducing dependence on fossil fuels. Electricity usage in the U.S. is projected to grow more than three times as fast as committed resources over the next 10 years. Peak demand for electricity is forecasted to increase by almost 18 percent or approximately 135,000 MW—enough energy to power more than 100 million homes on an average day. Meanwhile, committed resources to meet demand, including demand response programs, are projected to increase by only roughly 8.5 percent or 77,000 MW, according to statistics from the North American Electric Reliability Council. A power gap will inevitably persist, unless 1) U.S. citizens and companies follow environmental guidelines for energy conservation and 2) companies find ways to improve power conversion efficiency, with lower financial and environmental costs. It is upon this second directive that IXYS Corporation has found success.

**BDO:** ***What opportunities are you currently seeing in the semiconductor space?***

**Uzi:** As mentioned, worldwide demand for electrical energy is only increasing due to:

- The proliferation of technology-driven products that require electricity, including telecommunications equipment and portable electronics
- Increased use of electronic content in traditional products such as airplanes, automobiles and home appliances
- Increased use of automation and electrical processes in industry and mass transit systems
- The growth of the Internet and mobile telecommunications demand
- The penetration of technology into developing countries

The supply-demand constraint calls for power semiconductors, integrated circuits and microcontrollers that can make efficient use of the available electricity. Our opportunities are boundless.

**BDO:** ***IXYS serves numerous industries—is there one particular sector where you are seeing increased demand or opportunity?***

**Uzi:** If we look at our core revenue streams, approximately 47 percent of sales come from the industrial sector, followed by telecom (14 percent), medical (10 percent), consumer (15 percent) and the remaining from transportation and other applications. Demand from the industrial sector isn't likely to abate, as evidenced by Semicast Research indicating industrial semiconductor revenue growth from $32.4B in 2011 to $55.2B in 2017. Industrial needs range from control of energy generators to power lines, motor drives, automation, robotics, factory conveyor belts, power supplies, electric utility meters, elevator and escalator controls, to name a few.

Similar demand metrics are evident in the telecom sector, which is seeing sales growth due to Voice over Internet Protocol, WiMAX and WiFi, among others. The medical sector, which utilizes power semis for defibrillators, scanning devices and surgical lasers, for instance, spent $4.1B in 2012 on semiconductors, and is expected to rise to $6.4B by 2017. Market dynamics reaffirm our focus on IXYS' traditional applications and customers.

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## Q&A WITH UZI SASSON

However, IXYS continues to invest in new technologies (microcontrollers, rectifiers, thyristors) aimed at high growth markets, including power management and power quality. Global power management is one of the fastest growing subsectors of the industry, with increasing adoption in consumer electronics and automotive applications. Power management needs are endless, ranging from home appliances to the smart grid to standby power reduction to hybrid electric vehicles.

**BDO:** ***In a 2010 interview with*** **Semiconductors, Semiconductor Equipment & EDA Software Report,** ***you mentioned alternative energy being a strong growth area for IXYS. Is this still true and are you seeing more opportunities among U.S. customers than four years ago?***

**Uzi:** As forerunners in electrical efficiency/conservation, we would be remiss in not tapping the alternative energy market—working to harness unrefined power for use on the electric grid. For more than 15 years, IXYS has been working with U.S. and foreign customers, supplying chips for windmill inverters and solar panels, while developing solar cells to charge batteries. We continue to work with some of the largest solar and wind energy companies in the U.S. and abroad, capturing increasing market share. However, the alternative energy industry as a whole has had fits and starts over the past few years, especially after many European countries cut tax breaks for renewable energy companies, and the U.S. market, oversaturated with startups, saw some contraction. Importantly, IXYS wasn't negatively impacted by these shifting trends, as we remained the go-to supplier for the alternative energy companies still thriving; however, we have yet to see the growth trajectory expected in this market.

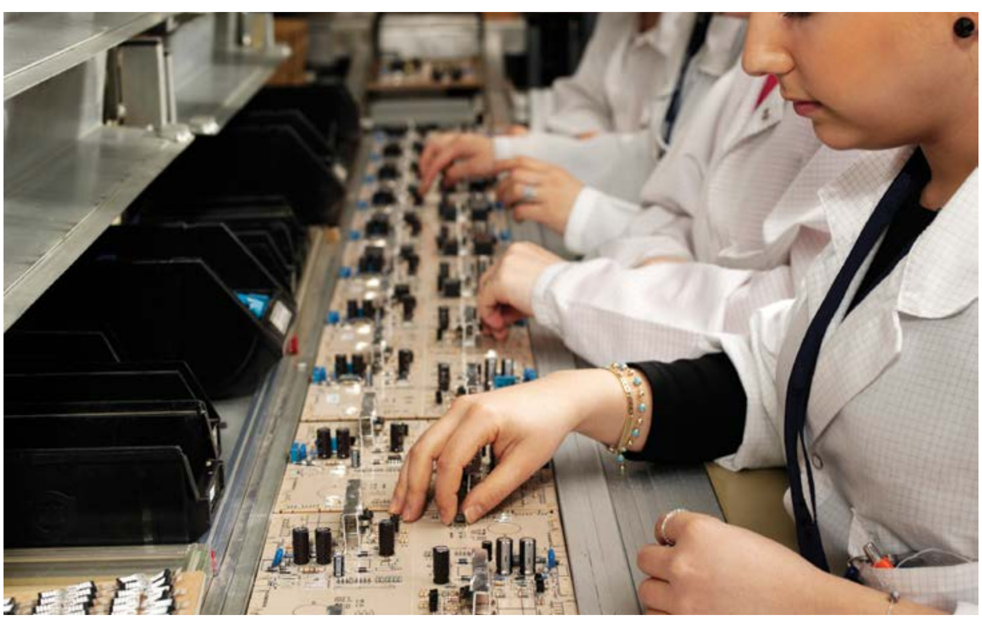
**BDO:** ***According to Bloomberg, almost $11 billion in North American semiconductor transactions were announced in the first half of 2014—what is your take on M&A activity in the semiconductor industry for the rest of 2014 and beyond?***

**Uzi:** It would be difficult to prognosticate on future M&A deals in the semiconductor industry, as there are many variables at play. Signs of growth are present, starting with the growing U.S. GDP, firming European economies and resumption of spending in emerging countries. Global stocks have enjoyed moderate gains in the first six months of 2014, and companies are rebounding with stable earnings and healthy sales. In that context, many companies that stockpiled cash during the downturn as a hedge against further downside risk have now started seeking opportunities to deploy that cash for strategic advantage. M&A is the natural course of action. The semiconductor industry is not unique in this position. Overall U.S. M&A activity jumped 98.2 percent in the first half of 2014, with total deal value nationally at $694 billion, according to Mergermarket.

**BDO:** ***What do you think are the key factors to successfully manage a global company in today's economic environment?***

**Uzi:** There are four key factors to successfully manage companies, regardless of the business model or industry.

1. A company must be able to adapt to the changing landscape. Without the ability to adapt to the faster game, new market trends, new technologies and changing customer demands, even some of the largest, most insulated companies have failed.
2. Avoid bureaucracy. When companies become too big, efficiency breaks down. When an approval takes months or multiple tiers up the management ladder, you can miss the first mover advantage. When companies are too top-heavy, they don't allocate enough resources and money to R&D, engineering or sales initiatives that ultimately drive their growth.
3. A company must attract the best talent in its respective industry--seek people who can improvise, do more with less in a cost-competitive product design environment and drive change and/or innovation. We firmly ascribe to this belief and have built a dedicated team of professionals across all areas of the organization from engineering/R&D to sales to manufacturing.
4. A business needs to have a global footprint, with sales and product infrastructure on almost every continent. Many businesses focus on developed countries throughout Europe and North America; however, the real growth opportunities lie in emerging markets throughout South America and Africa, for example. A company's ability to capture market share in emerging economies may prove to be the game changer in the next 20 years.



*Uzi Sasson is President and CFO of IXYS Corporation. He can be reached at u.sasson@ixys.net.*

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# WEARABLE DEVICES: OPPORTUNITIES FOR HARDWARE COMPANIES

**By Slade Fester, Bill Bithoney and Venson Wallin**

The hardware sector is seeing something of a revolution. While software has enjoyed years of high growth and investor interest, hardware is becoming increasingly attractive thanks to mobile and significant appeal in wearable technology, both of which have helped drive continued growth in data storage and other markets surrounding what is now coined The Internet Of Things.

In fact, IDC reports that consumers and businesses will buy nearly 112 million wearable computer devices by 2018, marking a 78.4 percent growth rate from 2014's predicted sales. Healthcare and fitness are key drivers of this growth, and the digital fitness device segment alone grew to $330 million in 2013, according to NPD Group. Popular devices like FitBit and Nike's FuelBand monitor heart rate and steps and have turned retail and consumer products companies into technology companies. Other companies, like UnderArmour, are considering partnerships with tech companies in order to enter the booming market.

Beyond fitness, wearable medical devices look to disrupt healthcare delivery and patient care. This summer Apple unveiled partnerships with several healthcare providers and a new platform called HealthKit which seeks to integrate data across providers. According to Apple, with the platform, "your blood pressure app could share its data with a physician app, such as the Mayo Clinic app, so your doctor can provide high-quality guidance and care." Preventice's BodyGuardian Remote Monitoring System and Avery Dennison's Metria Wearable Technology also seek to deliver patient data from wearable sensors to doctors.

As the line between consumer electronics and medical devices continues to blur, and the demand increases, the opportunity for hardware companies to capitalize on this growing category is clear.

## ▶CAPITALIZE ON NEW MARKET NEEDS

As innovation becomes increasingly driven by software, and markets in other areas such as personal computers and tablets become more mature, hardware companies are at risk of allowing their products to be commoditized. Access to new markets is key to a company's survival in the constantly evolving hardware market.

In this environment where timing is critical, and customers demand solutions-based products, partnering with consumer brands, healthcare companies or even other hardware companies will likely be a differentiator. Hardware companies considering partnerships should weigh the pros and cons of a joint venture over other growth alternatives such as acquiring technology or a business. In many cases, the time to market is too short, and there is no practical way to meaningfully penetrate a new segment without a partner that is already positioned in the market and has adequate capital to execute on a strategy.

When it comes to wearable devices, many healthcare organizations fit the bill. As the healthcare model transitions from fee-for-services to value-based care, the interest in population health management is expanding and there is a desire to establish a more integrated relationship between the provider and patient. This not only benefits the patient in terms of the quality of care received, but the health system also experiences cost savings from fewer unnecessary and costly readmissions and gains access to greater amounts of vital patient data.

Rather than quarterly lab visits for chronic conditions (diabetes, congestive heart failure, etc.), there is more freedom to conduct many of these tests on a regular basis from the comfort of the patient's own home, with little or no disruption to daily routines. For example, physicians use weight gain as a key metric in managing congestive heart failure. Digital scales can wirelessly communicate all patient data to a healthcare system, which can alert physicians to a patient's worsening condition. When doctors are aware of these developments, they're able to adjust the patient's medicine prospectively prior to the patient deteriorating and requiring hospitalization. This technology not only proves much more convenient to the patient, but it also opens the door for a mutually beneficial and innovative relationship between hardware and healthcare as companies look to develop hassle-free, real-time health monitoring devices.

## ▶CAPITALIZE ON INFRASTRUCTURE NEEDS

It's no secret that there has been a tremendous increase in the amount of data stored, accessed and analyzed over the past several years. The Internet of Things and Big Data have amplified storage and infrastructure needs tremendously, providing a significant growth strategy for hardware companies. Now, changes in healthcare are affording even more opportunity. Electronic medical records are already fueling increased demand in the storage market, and the data captured from sensors in wearable devices will also need a home.

Hardware companies need to continuously innovate to reduce power consumption and latency, and increase speed in the data room. Additionally, there is a constant drive to reduce inventory costs through procurement and design changes as hardware companies test the limitations of Moore's Law in a highly competitive market.

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▶Read more

# MARK YOUR CALENDAR...

The following is a list of upcoming conferences and seminars from the leading technology associations and business bureaus:

## OCTOBER 2014

**October 7-8**
**13th Annual Bio Investor Forum**
The Palace Hotel
San Francisco, Calif.

**October 7-9**
**Semicon Europa 2014**
Alpexpo
Grenoble, France

**October 8**
**BDO's Technology and Life Science Executive Roundtable***
Silicon Valley Capital Club
San Jose, Calif.

**October 22-23**
**12th International System-on-Chip Conference**
University of California, Irvine
Irvine, Calif.

## NOVEMBER 2014

**November 9-12**
**CA World**
Mandalay Bay Resort & Casino
Las Vegas, Nev.

**November 20-21**
**Embedded Device Security Conference**
Trinity Club
Seattle, Wash.

## DECEMBER 2014

**December 17-19**
**Tokyo International Conference on Software Engineering and Digital Technology**
Toshi Center Hotel
Tokyo, Japan

** Indicates that BDO is sponsoring and/or speaking at this event.*

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