NEWS FROM THE EIPC

We are pleased to show below the link for Pete Starkeys review of our recent Webinar. We are very much looking forward to the first proper conference we have been able to arrange for some time now; it is to be held in Frankfurt on 10th February 2022. Details to be advised.

http://pcb.iconnect007.com/index.php/article/129984/eipc-technical-snapshot-review-semi-additive-processes/129987/?skin=pcb

EIPC SPEeDNEWS

The Weekly On-Line Newsletter from the EIPC.
Issue 35 – December –2021

ELECTRONICS NEWS

PC shipments to China set 3Q21 record by breaking through 15 million units, says Canalys

Joseph Tsai, DIGITIMES, TaipeiTuesday 30 November 2021

*PC shipments **to** China were strong in 3Q21. Credit: DIGITIMES*

PC shipments (desktops and notebooks) in China grew 3% annually and 10% sequentially to reach more than 15 million units in the third quarter of 2021.

Compared to last year, desktop (including desktop workstations) shipments grew 3.8% to 5.3 million units. Notebook (including mobile workstation)

shipments were also slightly up by 1.9% at 9.7 million units. The growth has resulted in a record third-quarter shipment in China, beating a year-old record of 14.7 million unit shipments in the third quarter of 2020.

The top-4 vendors in the desktop and notebook market all enjoyed on-year growth in the third quarter of 2021, highlighting the blooming tech economies globally and their impact on the China market.

"The PC market for desktops and notebooks this quarter increased by 3% from a year ago and a strong 12% from two years ago owing to a new wave of upgrading in the commercial sector, and a renewed vigor in manufacturing due to the government's 'Industry 4.0' initiatives. Added to this, adjusted purchasing by education to upgrade internal facilities and infrastructure has built strong momentum for the market. While commercial sectors grow, consumer shipments have also seen strong demand due to students purchasing for new school terms, and generic anticipation of good deals from the Single's Day sales in November," said Canalys PC analyst Emma Xu.

Top-ranked Lenovo saw 8% on-year growth with six million units shipped and a market share increase of 2%. Dell and Hewlett-Packard (HP), with shipments of 1.9 million and 1.4 million units, grew by 18% and 15%, respectively from the third quarter of 2020.

Dell experienced record performance from notebooks this quarter and HP picked up pace in desktops. Asustek Computer secured fourth place with 44% on-year growth, mostly from its strong notebook shipments, typically gaming capable, which has always been strong in China.

Acer maintained its spot in the top-5 but was the only vendor in the group to record an on-year decline of 15%. Local player Huawei has seen shipments stagnate to 0.5 million, just below Acer. Despite the slow growth, it remained a strong alternative to Lenovo for local government purchasing and procurement.

China PC shipments, 3Q21 (k units)

Vendor	3Q21 shipments	3Q21 market share	3Q20 shipments	3Q20 market share	Y/Y
Lenovo	6,002	40%	5,542	38%	8%
Dell	1,948	13%	1,651	11%	18%
HP	1,493	10%	1,301	9%	15%
Asustek	1,072	7%	745	5%	44%
Acer	566	4%	670	5%	(15%)

| Others | 4,009 | 27% | 4,801 | 33% | (17%) |
| Total | 15,090 | 100% | 14,709 | 100% | 3% |

ELECTRONIC INDUSTRY NEWS

One for the Road

By Rebecca Day DESIGN FORUM

The car is sounding like the new frontier for audio companies eager to get into the space. Car audio is nothing new, of course — I had a killer aftermarket sound system back in the day for CDs — but streaming audio is putting a 2020s-era spin on road tunes, and a lot of companies want in.

Audi announced in May it was adding Sonos to its new Q4 e-tron electric vehicle this year, while keeping its Bang & Olufsen sound for the gas-powered customers. With the EV, Audi is "making use of a new hi-fi partnership while remaining faithful to its natural, unadulterated sound." Audi is keeping Bang & Olufsen, "with its brilliant sound pattern," for mid- and full-size models, but brought in new audio partner Sonos, "with a bass-heavy sound," for a younger crowd. I can't imagine Sonos was too happy with that description, but Audi says the Sonos brand "fits perfectly with the new compact SUV" and is the car maker's entry into the "electric future."

Amazon, meanwhile, touted a new car feature last spring for Amazon Music with a simplified car mode interface that can automatically launch as soon as drivers connect to the car's Bluetooth system. That's always a slippery slope in a vehicle: You don't want drivers fiddling with the music while they're supposed to keep their eyes on the road. Albert Brooks learns that the hard way in *Defending Your Life* when he smashes into a bus while swapping a CD.

Amazon told Digital Trends the feature was designed "to limit extensive browsing while driving" but its webpage warns

customers they shouldn't "interact with this app while operating your vehicle." That begs the question, Digital Trends observed, "Why give the app a car mode at all?"

Spotify irked subscribers last week by dumping its version of a simplified car control app called Car View that it launched in 2019. The free app was a stripped-down version of a smartphone-based user interface designed to minimize control functions to avoid driver distraction. Spotify said it is now "retiring" the feature, "to make way for new innovations coming down the track."

One such innovation is a hard-to-get $79 gadget instead of a free app. I know because I've been angling for one of the gizmos since I first heard about it last spring. The 4.6 x 2.5 x 0.7 inch device, unimaginatively dubbed Car Thing, finally showed up last week after a months-long chip-shortage—based delay, and we took it for a spin over the weekend.

I'm not exactly the prime customer for Car Thing because I'm the co-pilot who occasionally takes over driving duties from my partner, Liz. Mostly, I'm navigator and DJ, and I can choose playlists and songs easily without having to worry about distracted driving.

That said, I'd prefer not to have to hold the phone to control my Spotify music in the car, and that's what Thing is designed to do: let you skip songs, find playlists and search for new music by voice or buttons and dials — without having to futz with the phone.

Car Thing comes with the pieces and parts it needs to stick to various spots in a car, so you can attach it to a vent or to the CD player slot with a clever mount. The mics for voice control are on top of the device so you have to be sure air flow from vents doesn't disrupt operation. That's an Alexa-era problem.
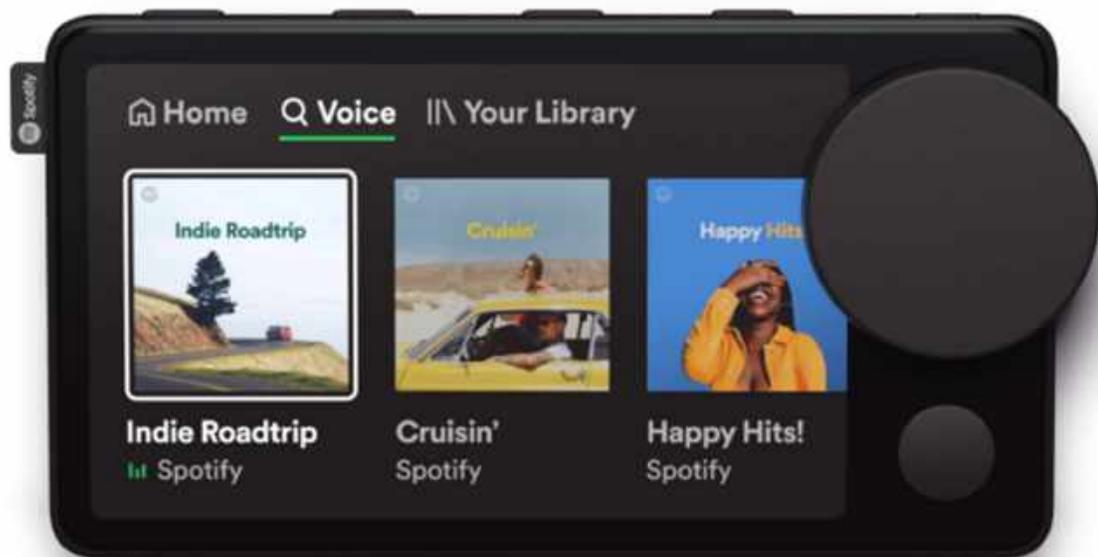
Only this voice engine isn't Amazon's Alexa, or Google Assistant, or Apple's Siri, for that matter. Sonos' annual report is full of risk factors about its smart speakers being dependent on its competitors when it comes to voice control. Spotify didn't put itself at its competitors' mercy, tapping instead fellow Swedish company ReadSpeaker as its digital voice partner. The

voice engine operates like Google Assistant and Siri, though, requiring you to say, "Hey Spotify" before requesting a playlist or album.

Working with Thing was intuitive. It had no problem with bringing up the latest albums from Adele and Brandi Carlile when I summoned them, and we got to a *West Wing* podcast in good order.

It was trickier trying to access my custom-named playlists. Spotify had the same problem my Google Home speaker has when I ask it to play my personal RoadTrip playlist: It chooses its own instead. Car Thing oddly served up Herbie Hancock's "Watermelon Man" from a playlist called Family Road Trip that wasn't mine. That's one of my favorite jazz tunes but not what I was in the mood for. I tried again without the word "The" and was delivered a playlist called Latin Guitar Spirit. It was lovely music but not remotely what I was looking for.

The lesson I learned was to customize the playlist name so that it's unique to me, without making it too obscure for the voice engine to recognize. That's likely easier said than done.

It's nearly December so I wanted to hear one of my favorite holiday tunes, "Elohai n'tzor," by Pink Martini. I wasn't even going to attempt to confuse the voice engine by butchering the Hebrew pronunciation, so I took a hybrid approach, asking for the name of the album, *Joy to the World*, and then scrolling with Thing's dial to get to the right song.

Car Thing's 3.97-inch touchscreen display shows album cover, artist, song title and control functions like fast-forward and pause. Its large dial scrolls through songs; when you hit one you like, press the dial to select it. A smaller button beneath the dial takes you back to the previous screen. Four tiny preset buttons on top take you to favorites you want to get to quickly: a playlist or album, for instance. But you can't preset an individual song, which would have been perfect for "Elohai n'tzor."

The dial is supposed to control volume, too, but that didn't work for me. Turning the knob had no effect on the volume, nor did using the phone's volume keys. I ended up having to use the car audio system to control volume, which meant I was using three different systems to play music: the iPhone, the Ford unit and Car Thing. Cumbersome.

I'm pretty sure Spotify sees Thing as an intermediate step. Its CEO, Daniel Ek, said last month that Car Thing is Spotify's effort to "see how the next-generation of car entertainment systems could look." Ek called Thing a "test to see if we can increase the engagement that consumers are having in the car" and an alternative to connecting a phone via Bluetooth to the car's audio system.

Of course, that's exactly what I had to do with Car Thing: I connected it to the 12V outlet for power, to my phone for the Spotify app, and to a USB port to power my phone and tap into the car's sound system as a USB source. Like lots of interim product concepts, it's a little kludgy, and no doubt Spotify has its sights on direct integration with future OEM car entertainment systems.

Until that happens, we'll likely continue to use Car Thing for longer drives when it's worth attaching the device for more than a half hour of drive time. Ek said over two million people have signed up to get the Thing, and I'm not surprised. With millions of audio tracks, playlists and podcasts available via my Spotify subscription, voice access is pretty critical to getting to the ones I want.

Rebecca Day

The 72-hour week is taking its toll on Chinese workers

By Susan Meng

The draining 996 work schedule—named for the expectation that employees work 9 a.m. to 9 p.m., six days a week—has persisted in Chinese companies for years despite ongoing public outcry. Even Alibaba co-founder Jack Ma once called it a "huge blessing."

In early October this year, it seemed the tide might have been turning. After hopeful signs of increased government scrutiny in August, four aspiring tech workers initiated a social media project designed to expose the problem with the nation's working culture. A publicly editable database of company practices, it soon went viral, revealing working conditions at many companies in the tech sector and helping bring 996 to the center of the public's attention. It managed to garner 1 million views within its first week.

But the project—first dubbed Worker Lives Matter and then Working Time—was gone almost as quickly as it appeared. The database and the GitHub repository page have been deleted, and online discussions about the work have been censored by Chinese social networking platforms.

The short life of Working Time highlights how difficult it is to make progress against overtime practices that, while technically illegal in China, are still thriving. But some suspect it won't be the last anonymous project to take on 996. "I believe there will be more and more attempts and initiatives like this," says programmer Suji Yan, who has worked on another anti-996 project. With better approaches to avoiding censorship, he says, they could bring even more attention to the problem.

Tracking hours

Working Time started with a spreadsheet shared on Tencent Docs, China's version of Google Docs. Shortly after it was posted, it was populated with entries attributed to

companies such as Alibaba, the Chinese-language internet search provider Baidu, and e-commerce company JD.com.

"9 a.m., 10:30 p.m.–11:00 p.m., six days a week, managers usually go home after midnight," read one entry linked with tech giant Huawei.

"10 a.m., 9 p.m. (off-work time 9 p.m., but our group stays until 9:30 p.m. or 10 p.m. because of involution," noted another entry ("involution" is Chinese internet slang for irrational competition).

Within three days, more than 1,000 entries had been added. A few days later, it became the top trending topic on China's Quora-like online forum Zhihu.

As the spreadsheet grew and got more public attention, one organizer, with the user name 秃头才能变强 ("Only Being Bald Can Make You Strong"), came out on Zhihu to share the story behind the burgeoning project.

"Four of us are fresh college and master's degree graduates who were born between 1996 and 2001," the organizer said. Initially, the spreadsheet was just for information sharing, to help job hunters like themselves, they said. But as it got popular, the organizers decided to push from information gathering to activism. "It is not simply about sharing anymore, as we bear some social responsibility," 秃头才能变强 wrote.

	公司（必填）	部门（必填）	岗位（必填）	base地（必填）	上班时间（必填）	下班时间（必填）
338	美团	智慧交通机票	后端	北京	10~10.5	8~10
339	明略科技	秒针	算法工程师	北京/上海	10点	7点
340	蘑菇街	中后台	前端	杭州	9:30	6:30
341	南方基金	it投研	投研	深圳	8.40	8~9
342	拼多多	多多买菜	软开	上海	10：00	8:00-9:00
343	拼多多	多多买菜	商务	上海	11:00	8:00
344	拼多多	广告	数分	上海	11：00	10：00-11：00
345	拼多多	平台治理	运营	上海	11:00 打卡	8:00打卡，一般10点后下班

COURTESY OF THE AUTHOR

The spreadsheet filled a gap in China, where there is a lack of company rating sites such as Glassdoor and limited ways for people to learn about benefits, office culture, and salary information. Some job seekers depend on word of mouth, while others reach out to workers randomly on the professional networking app Maimai or piece together information from job listings.

"I have heard about 996, but I was not aware it is that common. Now I see the tables made by others, I feel quite shocked," Lane Sun, a university student from Nanjing, said when the project was still public.

Against 996

According to China's labor laws, a typical work schedule is eight hours a day, with a maximum of 44 hours a week. Extra hours beyond that require overtime pay, and monthly overtime totals are capped at 36 hours.

But for a long time, China's tech companies and startups have skirted overtime caps and become notorious for endorsing, glamorizing, and in some cases mandating long hours in the name of hard work and competitive advantage.

In a [joint survey](#) by China's online job site Boss Zhipin and the microblogging platform Weibo in 2019, only 10.6% of workers surveyed said they rarely worked overtime, while 24.7% worked overtime every day.

Long work hours can benefit workers, Jack Ma explained in 2019. "Since you are here, instead of making yourself miserable, you should do 996," Ma said in a speech at an internal Alibaba meeting that was later shared online. "Your 10-year working experience will be the same as others' 20 years."

But the tech community had already started to fight back. Earlier that year, a user created the domain 996.icu. A repository of the same name was [launched on GitHub](#) a few days later. The name means that "by following the 996 work schedule, you are risking yourself getting into the ICU (intensive care unit)," explains the GitHub page, which includes regulations on working hours under China's labour law and a list of more than 200 companies that practice 996.

Within three days, the repository got over 100,000 stars, or bookmarks, becoming the top trending project on GitHub at that time. It was blocked not long after by Chinese browsers including QQ and 360, ultimately disappearing entirely from the Chinese internet (it is still available through VPNs).

The 996.icu project was quickly followed by the [Anti-996 License](#). Devised by Yan and Katt Gu, who has a legal background, the software license allows developers to restrict the use of their code to those entities that comply with labor laws. In total, the Anti-996 License has been adopted by more than 2,000 projects, Yan says.

State involvement

[This company delivers packages faster than Amazon, but workers pay the price](#)

South Korean e-commerce giant Coupang uses AI to promise almost-instant delivery. But speed comes with troubling labor issues—including worker deaths.

And on August 26, China's Ministry of Human Resources and Social Security and the Supreme People's Court jointly [published](#) guidelines and examples of court cases on overtime, sending reminders to companies and individuals to be aware of labor laws. But even though authorities and state media seem to be taking a tougher stand, it is unclear when or if the rules that make 996 illegal will be fully enforced.

Some companies are making changes. Anthony Cai, a current employee of Baidu, says working six days a week is quite rare in big companies nowadays. This year, several tech companies including and ByteDance, the developer of TikTok, cancelled "big/small weeks," an emerging term in China that refers to working a six-day schedule every other week. "Working on Saturday is not that popular anymore," Cai says. "However, staying late at the office is still very common, which is not usually counted as overtime hours."

In the future, companies may have to scale further back on overtime to attract young applicants. Faper Fu, a university student in Nanjing, says he has little interest in accepting 996 when he enters the job market. "If I am getting paid a lot, I may consider it," he says. "But it is not my long-term plan 100%. Having work and life balance is very important to me."

Cary Cooper, a professor of organizational psychology and health at Alliance Manchester Business School in the UK, thinks Chinese companies will pull away from overtime culture when they see evidence of the impact that long hours have on the

health and productivity of workers. "There is no evidence that if people consistently work long hours, their productivity level will increase—it's the opposite," he says.

In the meantime, Cooper says, younger generations "won't stop fighting for a good quality of working life."

"996 will only make human machines," wrote 秃头才能变强. "And the only result of a dry human battery is being thrown into the trash can after the battery goes dry."

How Ford's Farley Dug Fields of Gold

By [Colin Barnden](#) 11.14.2021 2

Ford has been on a roll ever since it promoted Jim Farley to the C-suite, first as COO and more recently as CEO.

 James Farley

Connected

Following Tesla's success with over-the-air (OTA) updates, Ford has developed a similar capability that it calls "Ford Power-Up" which appears to be based on NXP's vehicle network processors.

Ford Power-Up will provide OTA updates for vehicle systems such as BlueCruise, as well as a range of connected vehicle services to be developed with Google. Ford announced a partnership with Qualcomm at CES in 2018 which is certain to lead to the proliferation of 5G cellular connectivity in Ford vehicles over the next couple of years.

Assisted

While Tesla CEO Elon Musk was busy bragging about "Full-Self Driving" and a one million vehicle robotaxi network, Ford quietly set about developing a partnership

with Intel's Mobileye to develop safe but somewhat mundane Level 1 and Level 2 driver-assistance technology.

"BlueCruise" is Ford's Level 2 hands-free highway assist system. It features operational design domain limits restricting use to divided highways only, and a robust vision-based driver monitoring system (DMS) to permanently monitor the driver's attention state and engagement level using head-pose estimation and eye-gaze tracking, thus successfully eliminating automation complacency.

I have spent many hours researching BlueCruise because my analysis suggests Ford has the safest and most sophisticated DMS in a production vehicle today, using the Seeing Machines Fovio processor running its Occula neural processing unit (NPU). Further explanation of this technology is provided in the video below.

The awareness of DMS as a critical safety technology is set to rise dramatically in the short-term, following the inclusion of legislation to monitor for impaired driving in the $1.2 trillion bipartisan infrastructure bill. The importance of the impaired driving legislation to save lives was very clearly spelled out in this announcement from Mothers Against Drunk Driving (MADD).

The role of DMS to passively detect alcohol impaired driving is discussed in detail in this submission document to NHTSA (National Highway Traffic Safety Administration) by Seeing Machines. Research is currently underway to expand the future capability of DMS to also detect drugged driving, in particular for impairment caused by cannabis use.

Ford has provided little detail of BlueCruise thus far and recently announced the OTA rollout for the feature has been delayed until the first quarter of 2022, to allow more time for testing. However, I expect to hear a lot more about the system and especially the competence of its DMS to prevent automation complacency before the end of this year.

Personalized

With DMS set to become a mandatory requirement in all vehicles to detect for distracted, drowsy and impaired driving, an opportunity has been created for automakers to use the in-cabin driver monitoring camera for the provision of personalized services. This is currently one of the most exciting, fast moving, and innovative areas for automotive development.

In an article last year entitled "Time to Open Eyes to Eye Tracking," I observed that Google may be developing an eye-gaze controlled version of Android Automotive OS. Although I was a little off target with that specific assessment, I was in the right ballpark.

Subsequent speculation about the Apple Car and even a possible Apple C1 car applications processor formed the basis of my vision of a future where eye-gaze

tracking, voice assistants and 5G cloud connectivity would come together to create what I called an "immersive user experience."

Although the development of an Apple Car is highly speculative, in an absolute masterstroke Ford's Farley announced the appointment of Doug Field as chief advanced technology and embedded systems officer. Field joins Ford from none other than Apple, where he served as VP, Special Projects Group. In an interview since joining Ford, Field observed "the car will become an immersive experience."

Based on announcements from Qualcomm, my assessment is that Field could already be evaluating a radical redesign of Ford's infotainment system, combining Qualcomm's fourth-generation cockpit applications processor and 5G baseband processor, with Seeing Machines' DMS and Google's Android Automotive OS.

This would create a never-before-seen automotive immersive experience delivering as yet undefined personalized services but also integrating the most advanced capabilities of the Seeing Machines Occula NPU to minimize driver distraction and monitor driver workload.

I always assumed that Apple would lead this highly innovative in-cabin development. However, with Farley's leadership and Field's vision, it is instead Ford that looks to have all the necessary building blocks in place to accomplish it first, possibly as soon as the 2024 model year. Who would have forecast that two years ago?

Forget about self-driving. The greatest opportunity for automakers to generate value-added, subscription-based services is a combination of 5G cellular, infotainment, and DMS. That's Qualcomm, Google, and Seeing Machines.

Electric

Ford has made headlines this year with the launch of its Mustang Mach-E and the announcement of the F-150 Lightning, an all-electric version of its best-selling pickup truck. In September, Ford announced an $11.4 billion investment in electric vehicles to create 11,000 jobs with a campus in Tennessee and twin battery plants in Kentucky. Ford targets forty percent electric car sales by 2030 and owns a minority holding in electric truck startup Rivian.

Storm clouds gather

Consumer Reports has described in detail how Tesla's marketing hype has far exceeded its technological competence, while the appointment of Missy Cummings, an engineering professor at Duke University and outspoken critic of Tesla's indifference on safety, to the role of senior safety advisor at NHTSA confirms the regulatory storm clouds are gathering.

With National Transportation Safety Board chair Jennifer Homendy publicly criticizing Tesla's "self-driving" features and NHTSA conducting a formal safety

probe into the automaker, it is no surprise that Elon Musk is choosing to now sell billions of dollars of Tesla stock, a portent to the next chapter of the Tesla story.

Free of the baggage of "Full-Self Driving" and Autopilot, Ford is rapidly eroding Tesla's lead with a technology strategy covering the key areas of connectivity, assisted driving, personalization, and electric vehicles. Under Farley's leadership, Ford is showing not only that technological innovation and safety are not mutually exclusive, but that it is well positioned for a golden period ahead.

Share this:

Industrial electronics new product cost strategy and NPI launch management

By VentureOutsource.com Staff

Increasing electronics OEM hardware functionality and complexity combined with product life cycles becoming shorter and shorter is driving the need for better new product development processes and more effective management applications when launching new product introductions (NPI).

This is especially true in non-traditional markets such as industrial electronics, automotive, aerospace/defence, and medical electronics due to the nature of extended supply chains requiring additional layers of tracking and repeatability – where field failures can play a difference between life or death.

Contract EMS manufacturers can no longer claim to have in-house NPI services and expect electronics OEM customers to then just follow the EMS provider's instructions and guidance.

Savvy OEM decision makers with extended contract EMS manufacturing supply chains know they still need to be an active participant to keep things aligned.

Discussions with industrial electronics OEM team members who focus on NPI today often place increasing emphasis on specific electronic design automation tools they want EMS firms to be using. These OEM NPI decision makers also express concerns about the lack of information flow coming from their EMS partners during NPI project start and evolution.

Understanding internal EMS factory NPI program costs, challenges, and EMS industry generally accepted NPI standards is helpful for OEMs wanting to stay two steps ahead of their EMS partners with regards to NPI program execution or, at the very least, what should be happening with their NPI program.

Add to this, OEM executives cannot afford to disregard NPI product costs, or EMS partner delays.

Focus. Focus. Focus.

Unless your new product will compete in a vacuum, every OEM NPI eventually faces continuous pricing pressure from end markets.

Your product needs to be built at the right quality, at the right time and, so on, and, while your OEM new product cost remains important, you also have your product total landed cost objectives. And, once your NPI launches in the market your total landed cost objectives becomes your focus.
As you face continuous margin erosion, you try countering this by introducing other new products. But, whether your company has a team of 10, 100, or 1,000+ people responsible for NPI portfolio management, knowing the right information to focus on for your NPI program managed by EMS manufacturers can help keep your program, and corresponding EMS provider employees (whom you have no real, direct authority over) aligned.

To help meet your NPI program goals and objectives participating EMS and OEM teams members will usually include at least the following functions:

- EMS provider quality engineer

- EMS NPI process engineer

- EMS test engineer

- EMS production process engineer

- EMS component engineer

- OEM manufacturing test engineer

- OEM quality engineer

EMS providers are tasked with reviewing and updating customer NPI program documents frequently as changes occur. Being able to anticipate any changes to your NPI roadmap, or costs, ahead of time can help your company to launch new products with confidence and a more resilient contract manufacturing supply chain with better cash conversion that can have lasting effects on how your supply chain works to further support your total landed cost objectives.

Below is just one example where the following (reasonable) target spec goals and objectives might be established for a new program build and launch inside an EMS factory:

Process	Prototype	Pilot	Pilot+90 Days	Pilot+180 Days
PCB Assembly ICT	n/a	80%	93%	96%
PCB Assembly Functional Test	n/a	85%	95%	98.5%
Systems Functional Test	80%	95%	98%	99.5%
RMA*	n/a	n/a	.25%	.10%

As your NPI program progresses in your EMS provider factory, many new product cost reductions, especially on EMS box build and mechanical services, often times need design changes where there is an R&D cost surrounding these.

Most OEM equipment companies will have opportunities to introduce new products depending on several factors like how commoditized your market is, how aggressive your company is, financial stability of current EMS partners, program, sales and market growth, to mention a few.

But for the majority of OEM equipment firms, R&D investments are better spent on introducing new products. This sounds easy if have only a few product lines. But when you have 100 or 100s of products your NPI teams have to evaluate at the same time things becomes considerably more complex.

Learn more about new product NPI program launch and management in your 30-page handbook you can request here.
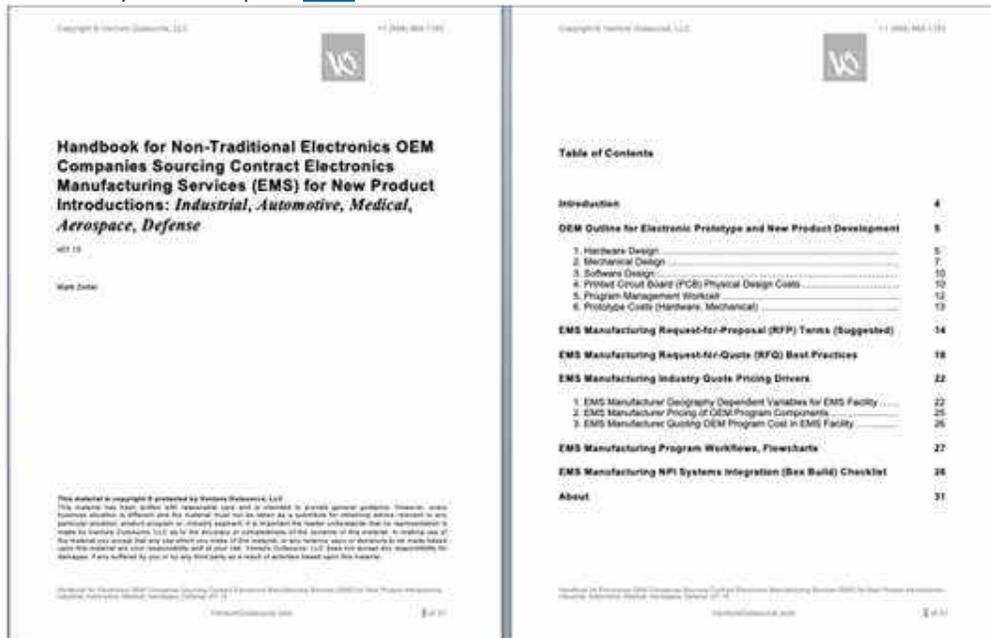
Our handbook is divided into the primary topics below, with several topics going deeper, with detailed industry examples and clear suggestions and checklists for readers to consider:

- OEM Outline for Electronic Prototype and New Product Development
- EMS Manufacturing Request-for-Proposal (RFP) Terms
- EMS Manufacturing Request-for-Quote (RFQ) Best Practices
- EMS Manufacturing Industry Quote Pricing Drivers
- EMS Manufacturing Program Workflows, Flowcharts
- EMS Manufacturing NPI Systems Integration (Box Build) Checklist

Our handbook can help guide OEM equipment manufacturers when formulating and benchmarking their new product launch roadmap and strategy. Request this handbook.

NEWS FROM THE UK

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FREE WEBINAR

WEDNESDAY 12 JANUARY 2022 AT 10:00 (UK TIME)

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By Piers Tremlett, Microchip Technology Inc

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- Wafer Level Hermetic Packaging
- Non-Volatile and Memory Demonstrators

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Monday 11 and Tuesday 12 January 2021: 10:00 - 12:30
Hear about the Latest Research on Power Electronics from
Warwick, Nottingham Bristol, Newcastle, Edinburgh and Aalborg Universities

This **Research Showcase** addresses several of the key issues critical to the increased adoption of **Wide Bandgap (WBG) Semiconductors** within the growing power electronics industry, including:

- Gate Interface Reliability in SiC/GaN power devices

- Latest Advances in Packaging/Interconnects

- High Speed Sensing and Monitoring around GaN devices

- Optimisation of switching transients for SIC MOSFETs

- High Current SiC Applications

- Testing of SiC MOSFETs under normal and abnormal operations

*Registration is **free** for this event.*

Register Here

Forthcoming IMAPS-UK Online Events
Please Click on the Links below for More Information
Semiconductor Packaging Workshop Online
Thursday 11 February 2021
MicroTech 2021 Online Conference - Heterogeneous Integration - Packaging Future Microsystems
Thursday 25 March 2021

For any other details or information please contact:
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EIPC SPEeDNEWS

The Weekly On-Line Newsletter from the European Institute of Printed Circuits.
Issue 35- December 2021

PANDEMIC NEWS

We don't know enough about the new variant to panic yet.

The news: Just five days ago, South African scientists informed the World Health Organization that they'd identified a new covid-19 variant. The situation has escalated rapidly since then. The variant, known as B.1.1.529, has already been found in many countries across the world. On Friday it was designated a variant of "concern" by the WHO, which opted to name it "omicron," the 15th letter of the Greek alphabet, following the organization's naming system.

Governments are re-imposing border restrictions and closures, as well as new measures to mitigate Covid's spread among their populations. Health ministers from G7 countries are set to meet today to discuss their response.

What we know: Viruses mutate all the time, and that isn't cause for alarm on its own. Part of the reason why the omicron variant is worrying people is that it has so many mutations in its spike protein—approximately 30, which is roughly double the number delta has. This protein is the part of the virus that helps it to enter human cells. Preliminary evidence suggests this variant brings a higher risk of reinfection, according to the WHO.

The omicron variant has been identified in at least 15 countries already, mostly in southern Africa but also in the UK, Europe, Hong Kong, Canada, Israel, and Australia.

What we don't know: Amid all the panic, it's important to remember that we still know very little about the new variant—and we've been worried before about variants that have come to nothing. The crucial questions are whether it increases transmissibility, whether it worsens health outcomes (thus pushing up deaths and hospitalizations), and, crucially, whether it erodes immunity afforded by vaccines or previous infections. We don't have firm answers to any of these questions yet—although it seems likely, given the mutations, that it will affect the effectiveness of vaccines to some degree.

What you can do: As has been the case throughout the pandemic, the best thing you and your loved ones can do to protect yourselves is to get vaccinated. If you are offered a booster shot, take it. While it's possible that omicron might degrade vaccine efficacy, it won't eradicate it altogether.

by Charlotte Jee
MIT Technology Review

Issue 35 – December 2021

NEWS FROM THE IPC

North American EMS Industry Down 4.4 Percent in October

IPC Releases EMS Industry Results for October 2021

IPC announced today the October 2021 findings from its North American Electronics Manufacturing Services (EMS) Statistical Program. The book-to-bill ratio stands at 1.48.

Total North American EMS shipments in October 2021 were down 4.4 percent compared to the same month last year. Compared to the preceding month, October shipments fell 0.8 percent.

EMS bookings in October rose 40.0 percent year-over-year and rose 22.2 percent from the previous month.

"Supply chain constraints and parts availability continue to hamper electronics manufacturing. Order flow grew strongly during the month, while shipments declined," said Shawn DuBravac, IPC's chief economist. "I estimate shipments were roughly 12 percent below where they would be in a well-functioning market."
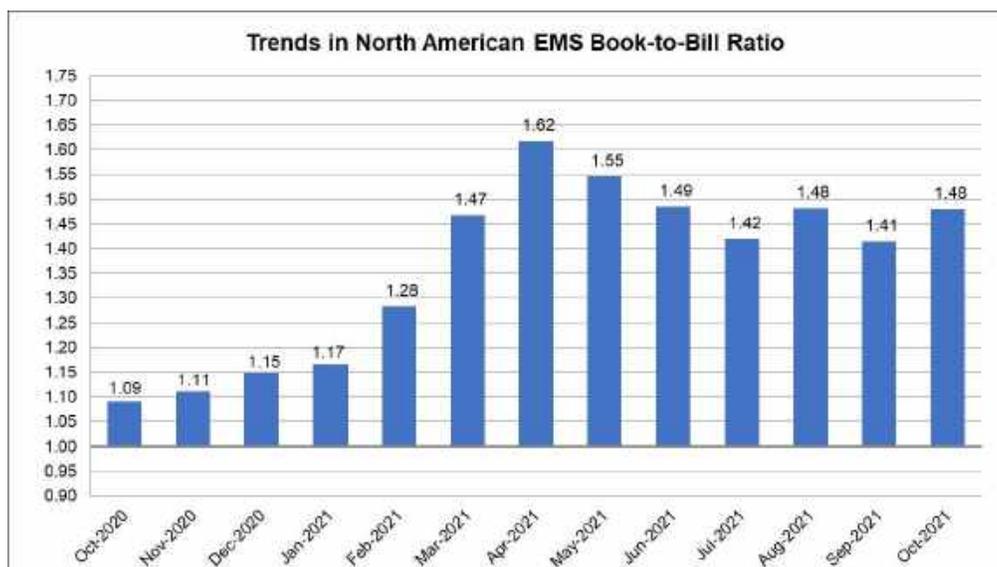
View chart in pdf format

Detailed Data Available

Companies that participate in IPC's North American EMS Statistical Program have access to detailed findings on EMS sales growth by type of production and company size tier, order growth and backlogs by company size tier, vertical market growth, the EMS book-to-bill ratio, 3-month and 12-month sales outlooks, and other timely data.

Interpreting the Data

The book-to-bill ratios are calculated by dividing the value of orders booked over the past three months by the value of sales billed during the same period from companies in IPC's survey sample. A ratio of more than 1.00 suggests that current demand is ahead of supply, which is a positive indicator for sales growth over the next three to twelve months. A ratio of less than 1.00 indicates the reverse.

Year-on-year and year-to-date growth rates provide the most meaningful view of industry growth. Month-to-month comparisons should be made with caution as they reflect seasonal effects and short-term volatility. Because bookings tend to be more volatile than shipments, changes in the book-to-bill ratios from month to month might not be significant unless a trend of more than three consecutive months is apparent. It is also important to consider changes in both bookings and shipments to understand what is driving changes in the book-to-bill ratio.

IPC's monthly EMS industry statistics are based on data provided by a representative sample of assembly equipment manufacturers selling in the USA and Canada. IPC publishes the EMS book-to-bill ratio by the end of each month

Current Conditions for the Electronics Supply Chain Remain Challenging

IPC has issued two new industry intelligence reports today: the [December sentiment of the global electronics manufacturing supply chain](#) report and the [December economic outlook](#) report.

Material and labour costs continue to be the two largest issues facing the electronics supply chain while inventory and transportation constraints continue to be a major impediment to growth.

Results from our monthly sentiment study find:

- Nine in 10 electronics manufacturers report rising materials costs with nearly three-fourths reporting rising labor costs.

- While order flow remains positive, higher costs are hurting profit margins; 58% reported expanding orders, but 40% reported a decline in profit margins, and 19% reported profit margin improvement

VIEW FULL SUPPLY CHAIN SENTIMENT REPORT

The December economic outlook report shows:

- Despite uncertainties, supply chain disruptions have resulted in unfilled pent-up demand that should help carry growth into the first half of 2022. While we have lowered our forecast somewhat, 2022 should still be a historically strong year.

- Incoming data is consistent with IPC's monthly sentiment study. There is capacity to buy, among both consumers and businesses, but supply chain constraints have limited potential growth in spending and investment. Manufacturers report strong order growth, but growth is being offset by higher costs and as a result profit margins are declining.

VIEW FULL ECONOMIC OUTLOOK REPORT

IPC's Chief Economist, and author of both reports, Shawn DuBravac is available for interviews. Contact Sandy Gentry at SandyGentry@ipc.org with interview requests.

EIPC SPEeDNEWS
Issue 35-- December 2021

International Diary

2021

HKPCA Hongkong
8-10 December
Hongkong, China

TPCA Taiwan
21-23 December
Taipei, Taiwan

2022

14th EIPC Technical Snapshot Webinar
Registrations via www.eipc.org
19 January

EIPC@ IPC APEX EXPO
25-27 January
San Diego, USA

EIPC Winter Conference
10 February
Frankfurt, Germany

EIPC @ SMT Connect
10-12 May
Nuremberg, Germany

EIPC @ CPCA
18-20 May
Shanghai, China

EIPC Summer Conference
Visit Ericsson 5G centre
14 & 15 June
Stockholm, Sweden

EIPC @ Electronica
15-18 November
Munich, Germany