NEWS FROM THE EIPC

THE WECC GLOBAL PCB STATISTICAL REPORT IS NOW AVAILABLE

The World Electronic Circuits Council (WECC) is a strategic partnership formed in 1998 by the major industry associations serving member companies in the global electronic circuits industry. Its purpose is to increase the global influence and effectiveness of its member organizations for the benefit and improvement of the industry.

The member associations co-operate on standards, market research, marketing, resource development, environmental issues, world trade, and economic and political affairs. The member organizations of WECC formed a working group in 2005 to pool their statistical resources and produce a global statistical report on printed circuit board (PCB) production for the benefit of their members. This group became the WECC Statistics and Market Committee.

The following associations and their representatives contributed to this report and are active members of the WECC Statistics and Market Committee:-

- CPCA – Kevin Yan, Vice President, China Printed Circuit Association, kevin_yyh@cpca.org.cn CPCA – Elaine Chen, inter@cpca.org.cn

- EIPC – Kirsten Smit-Westenberg, Executive Director, European Institute of the PCB Community, KWestenberg@eipc.org

- ELCINA – Rajesh Rawat, Manager, Electronic Industries Association of India, rajesh@elcina.com

- HKPCA – Manda Wong, Show Director, Hong Kong Printed Circuit Association, mandawong@hkpca.org

- IPC – Shawn Dubrava, Director of Market Research, IPC, ShawnDubravac@ipc.org
  IPC – David W Bergman, VP Standards• & Technology, IPC, davidbergman@ipc.org

- JPCA – Noriaki Wakakuri, Section Chief, Japan Electronics Packaging and Circuits Association, wakakuri@jpca.org

- JPCA – Toru Hagiwara, Associate Leader, Japan Electronics Packaging and Circuits Association, hagiwara@jpca.org

- JPCA – Kunio Takahara, Deputy General Manager, Japan Electronics Packaging and Circuits Association, takahara@jpca.org

- KPCA – Royce Ahn, Secretary General, Korea Electronics Packaging• and Circuits Association, royceahn@kpca.or.kr

- KPCA – Nara Yook, Deputy general manager, Korea Electronics Packaging and Circuits Association, kpca77@kpca.or.kr

- TPCA – Michelle Hung, Deputy Secretary General, Taiwan Printed Circuit Association,• michelle@tpca.org.tw

Please contact a representative at your association with any questions about the report or suggestions for improving this program.

 Availability: - The WECC Global PCB Production Reports are available only from these participating associations to their members. The reports are not available for sale.

Please contact Kirsten for your copy.

The EIPC Team.

EIPC Technical Snapshot Webinar – Feb 17, 2021

EIPC has particular pleasure in bringing news of a further Technical Webinar to be held on 17th February. In these confined days of lock down, and exhortations to stay at home and only go out for exercise, this only exercises the natural inclination to hop on a 'plane to some sunshine. Although not the same as Factor 20, one of our Webinars gives a high degree of protection from harmful ignorance, and you do not have to go out in the cold.

To be chaired by Christian Behrendt from Ilfa, the Webinar will have three speakers.

(1) Assessing PCBA cleanliness: the benefits of Ion Chromatography – Freddy Gilbert, Zestron. A sufficient PCBA cleanliness level is undeniably essential, not only to ensure that subsequent processes go forward smoothly (e.g. conformal coating), but also to prevent failures induced by corrosive and hygroscopic contaminants. Ion Chromatography (IC) is a useful extracting method for the assessment of PBA ionic cleanliness. It gives a good hint regarding the sensitivity of the assembly to moisture-related failure mechanisms. The IPC has established different extraction parameters in Ion Chromatography, whose importance will be discussed throughout this webinar

Freddy studied Material Sciences and Engineering at the Graduate School of Engineering of the University of Montpellier and the Technical University of Berlin. In his position as Technology Analyst in the ZESTRON Reliability & Surfaces team, he organizes and conducts Technology Coachings focused on failure analysis, surface analysis as well as risk assessment in the field of electronic control units and conformal coating

(2) PCBA cleanliness as a means to improve intrinsic humidity robustness – Dr. Rajan Ambat of the University of Denmark PCBA cleanliness is a key factor determining the humidity interaction when exposed to harsh climatic conditions, and therefore reliability. This talk will elaborate on the effect of wave and reflow solder chemistry on residue formation after flux activation, residue interaction with humidity, and resulting reliability problems for electronics. Talk will comprehensively cover the cleanliness issues resulting from wave and reflow soldering process, and how the knowledge can be used for increasing the intrinsic humidity robustness of PCBA based on our research activities.

 Dr, Ambat is currently Professor of Corrosion and Surface Engineering at Division of Materials and Surface Engineering, Department of Mechanical Engineering, Technical University of Denmark. He is also the Manager for the Centre for Electronic Corrosion/CreCon Industrial Consortium on climatic reliability of electronics at DTU, and Research Manager for the Corrosion node of Danish Hydrocarbon Research and Technology Centre.

(3) Proposed Updates to the Cleanliness Section of the IPC-6012 Automotive Addendum – Emma Hudson, HTC. The presentation will look at the proposals being made for the cleanliness section of IPC-6012 Automotive Addendum. The team is

looking at expanding the current section to enhance the requirements and recommendations based on input from SMEs from the industry about the problems being found and how we can implement testing to ensure the cleanliness level of the PCB received by the assembler. The changes are only at the proposal stage and we would welcome input from the industry.

Emma Hudson (L) is no stranger to EIPC members, she is our Vice-Chair. After graduating with a BEng in Materials Technology, Emma spent seven years working for a tier-1 automotive electronics manufacturer. She devoted the next 12 years to helping the PCB industry through the maze of safety certification and gained the reputation for being the "UL lady". Emma is a Board Member of the ICT, Chair of the British committee for Electronics Assembly Technology, IEC TC91 Convenor for the Requirements for Electronics Assemblies group, a member of the UL Standards Technical Panel, and Vice-Chair of two IPC committees.

Each speaker will have 15 minutes and we will end with a panel discussion.

To ensure a place at the Webinar, please register online: www.eipc.org

The webinar is free of charge for EIPC members.
The registration fee for non-members is € 50,- per person.

EIPC SPEeDNEWS

The Weekly On-Line Newsletter from the European Institute of Printed Circuits.
Issue 5 – February 2021

NEWS FROM NORWAY

Elmatica celebrating 50 years in the PCB Industry

Since 1971 Printed Circuit Broker Elmatica has supported industry leaders with technical consulting and procurement, securing their customers PCB supply chain. While celebrating their 50th anniversary this February, CEO Didrik Bech reveals some of the secrets behind the success story.

"It has been a privilege to support, develop and challenge the printed circuit industry over the last 10 years, after Arild Bakke and Ragnar Bakke lead the company for the first 40 years", says CEO Didrik Bech.

Elmatica was established by Ragnar Bakke in 1971 doing PCB layout until the early 80ties.

The company was then passed on to his son Arild Bakke in 1983, establishing offices in the Nordic countries and one of the first to start sourcing from China and further expanding the company. Didrik Bech joined Elmatica in 2011 as the third CEO, establishing several European and Chinese offices and moving the focus towards digitalization and automation.

Arild Bakke & Ragnar Bakke

The advantage in the market
"It has been a fantastic journey. Our advantage in the market is our experience, expertise and network. Procuring printed circuits is not comparable to procuring off the shelf components. One thing our customers appreciate about us is our transparency and honesty. If a design is not feasible, we will notify the customer and offer design alterations. We will never change a set design without consulting with the customer first", says Bech.

Since 1971 Elmatica has developed from 3 employees situated in Norway, to 44 employees worldwide, delivering to over 43 countries on 5 continents. "It is fantastic to see how Elmatica has changed and adapted to new opportunities over the last 50 years. Maintaining

the family spirit yet reaching new milestones and for the last periode pinning the company to the international scene of compliance and cyber security" says Arild Bakke.

Unprecedented times and record results
Elmatica has globally supported hundreds of customers and thousands of product owners in regard to technical assistance, orders processing, compliance, insurance, engineering queries, auditing and quality handling in regard to thousands of orders every year.

"Last year we delivered the best financial result in 50 years, a result that makes me particularly proud considering the unprecedented COVID circumstances, pushing the entire supply chain and people to its limits", says Bech.

Securing the supply chain
As a broker of printed circuits, Elmatica supports the customers in the whole product development process, and ultimately securing their supply chain. "We see that an ever increasing number of our customers are reaching out at an earlier stage in their development process, involving us in the beginning of the design process, where we advise in design solutions for improved design, panel utilization, cost improvement and material selection", says Bech.

The advantage in the market
A PCB is a unique customer specific article and it needs to be treated accordingly, not least as it consists of a drawing, and consequently is classified as a Controlled Unclassified Information (CUI), depending on the industry. "One also needs to take into consideration what materials can be used, where it can be produced, design improvements and cost factors.", says Bech.

From the North Sea to outer Space
An important partner for Elmatica in the first years was the oil and gas industry, delivering equipment to the North Sea. "You can practically say that we kicked off with the golden age of oil in Norway. Then the Telecom industry with complicated demands and challenging products soon came thereafter", says Bakke. Elmatica was able and ready to assist and secure these industries development with a rigorous network of partners, routines, quality and process control, and consequently delivering PCBs to some of the first cell phones ever produced. The Defence industry practically developed alongside Telecommunication, as Elmatica soon recognised that their requirements were well suited for the Elmatica quality standard.

"This resulted in a need to learn Export/Compliance Control and also Cybersecurity, which again has paved the way for entering the Space industry with perhaps the most rigorous demands in the world", says Bech.

Developing alongside the megatrends
With the Automotive industry as a new demanding partner in the late nineties, we quickly learned the requirements for volume production. "Our flexibility and willingness to adapt to new industries and specific industry compliance regulations and cooperate with the best

manufacturing partners for different demands, can be one of the factors for our success story. This may also be the explanation for how we have developed alongside the industry megatrends since the 70ties. The trust bestowed upon us for 50 years is something we value deeply", says Bakke.

"We could not have accomplished this without the incredible work of my colleagues. I am looking forward to following the adventure further on, from distance", Bakke finishes.

ELMATICA®

NEWS FROM THE UK

NEW TOOLS FOR OBJECTIVE EVIDENCE
GEN3 Discusses the Setting of New IEC Standards – 501 and – 502

Why do we test and set standards in the electronics industry? Using a system ensures that there is a common global measurement platform that helps catch technical errors, determines whether it meets quality compliance, and thereby reduces risk when bringing a new product to market.

In this piece, we'd like to introduce you to two new revised test methods that we will hold ourselves accountable to, in order to reduce electro-chemical failure risk and increase reliability.

These new revised International Standards are part of the IEC 61189-5 Series: Test methods for electrical materials, printed boards and other interconnection structures and assemblies:

• IEC 61189-5-501: Surface insulation resistance (SIR) testing of solder fluxes
• IEC 61189-5-502: Surface insulation resistance (SIR) testing of assemblies

Our focus here is on SIR testing of Assemblies to provide the necessary Objective Evidence required by the recently published IPC-J-STD-001 Revision H and the accompanying white paper, WP019B.

This revision has removed the sole requirement of <1.56μg/cm2 of NaCl equivalent of the old ROSE test and is a fundamental change in approach. This SIR test is augmented by a modified ROSE test, which is better known as Process Ionic Contamination testing (PICT), and detailed in IEC 61189-5-504. This test method provides the fastest and most effective method of process control, taking less than 15 minutes.

The scope of the 61189-5-502 test method states:
This test method measures changes to the surface insulation resistance of a pre-selected material set on a representative test coupon and quantifies the deleterious effects of improperly used materials and processes that may lead to decreases in electrical resistance.

An assembly process involves a number of different process materials including solder flux, solder paste, solder wire, underfill materials, adhesives, staking compounds, temporary masking materials, cleaning solvents, conformal coatings and more. The test employs two different test conditions of 85 °C and 85% relative humidity (RH), preferred for a process that includes cleaning, or 40 °C and 90% relative humidity (RH), preferred for processes where no cleaning is involved.

Testing is material (set) and process / equipment specific. Qualifications should be performed using the actual production equipment, processes and materials.

GEN3 President Graham Naisbitt, was the IEC TC91 Maintenance Leader for these new test standards. Graham stated:

"Both of these documents reflect the latest developments of measurement technology that we in GEN3 have been evolving with our peers over the past 25 years. The new test method IEC 61189-5-502, used for process characterisation of assemblies, is the latest revision derived from research conducted by the (British) National Physical Laboratory between 1999 and 2006.

For more than 25 years, the industry largely relied on a now defunct criteria of the weight of ionic contamination. This redundant concept has been replaced in a step change improvement by pivoting iconic contamination measurement to be used as a process control method. With industry experts, we have developed a new standard "Process Ionic Contamination Testing (PICT), IEC 61189-5-504, published in 2020. This test method provides the user with control evidence in less than 15 minutes.

This is the culmination of more than six years of research, bringing the very latest in test and measurement methodology.

Introduced between 2020 and 2021, IEC have now provided the electronics industry with the tools to provide the required **Objective Evidence***. The documents comprise:*

IEC TR 61189-5-506 – a Technical Report evaluating differing conductor spacings
IEC 61189-5-501 – Surface insulation resistance (SIR) testing of solder fluxes
IEC 61189-5-502 – Surface insulation resistance (SIR) testing of assemblies
IEC 61189-5-504 – Process Ionic Contamination Testing (PICT)

As the recently appointed Vice-Chair of IPC 5-30 Cleaning & Coating Committee and the Chair of the 5-32b SIR and Electrochemical Migration Task Group, I am honoured to be leading the teams both in the USA and around the World, and helping set the standard for the industry today and in the future. I am also indebted to the six years of collaborative effort we have enjoyed with automotive giant, Robert Bosch GmbH.

GEN3 AutoSIR and AutoCAF measurement systems continue to lead the way in measurement capability."

About GEN3
GEN3. Testing and measuring the electronics industry for over 40 years. For three generations, Gen3 have designed, engineered, manufactured, and distributed their test and measurement equipment into the electronics industry to shield their clients from failure in the field.

Their reputation for excellence has grown to a global scale. The team is made up of industry experts who work to set the standards around circuit testing, measurement, and compliance. They collaborate with key industry associations, offering our unique experience and expertise to educate all on what it takes to succeed. For product protection the preferred way is GEN3, where precision comes as standard, acting as a mentor and knowledge partner.

In the high-reliability arena, there is too much at stake to allow room for error. Testing must be finite and flawless. GEN3 understand the need for precision. Get closer to perfection by minimising your risk.

EIPC SPEeDNEWS

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Issue 5 - February 2021

ELECTRONIC INDUSTRY NEWS

TSMC to raise $9 billion for expansion amid shortages

By Alan Patterson TechSearch

TAIPEI — Taiwan Semiconductor Manufacturing Co. (TSMC) said that it plans two sales of bonds that would raise about $9 billion to expand production, possibly helping to ease a critical shortage of silicon.

In a Feb. 9 board meeting, the world's largest chip foundry approved the issuance of corporate bonds in Taiwan for as much as NT$120 billion (approximately $4.4 billion) and provided a guarantee to subsidiary TSMC Global to issue US dollar-denominated corporate bonds for up to $4.5 billion that would fund capacity expansion as well as pollution-prevention measures.

In the board meeting, TSMC also approved the establishment of a wholly owned subsidiary in Japan to expand research on materials for three-dimensional chips, with a paid-in capital of up to ¥18.6 billion (approximately $186 million). The announcement follows an unconfirmed report that TSMC plans to open its first overseas chip-packaging facility in Japan.

The company is running full tilt to meet demand that exceeds its production capacity. TSMC finds itself at the center of an increasingly geopolitical scramble to secure supplies of chips for everything from automobiles to smartphones. Government leaders from Germany to the US have recently urged Taiwan to help solve the chip shortfall.

"Soaring competition from tablets, laptops and electric cars are causing some of the toughest conditions for smartphone component supply in many years," said Neil Mawston, an analyst with Strategy Analytics. He said prices for phone parts such as chips and displays have jumped as much as 15% in the past two quarters.

Chip shortages are likely to erase $61 billion of expected sales for automakers, while the impact to the electronics industry could be far larger, according to Bloomberg.

In 2021, TSMC expects to invest between $25 billion and $28 billion in capital expenditures, compared with $17.2 billion last year, the company said in January. Rival foundry United Microelectronics Corp. (UMC) has increased its capex budget for 2021 to $1.5 billion from $1 billion in 2020.

TSMC's capex for 2021 includes investment for construction of its new facility in the US state of Arizona.

The company has acquired 1,100 acres of land near the city of Phoenix as part of a long-term plan to build a production site on the same scale as TSMC's so-called "megafabs" in Taiwan that are the mainstay of the company's production.

TSMC and next-door neighbour UMC said in January that their capacity is fully loaded, and the best they can do is to reallocate production to meet demand from global automakers like Volkswagen and Toyota, just to name a few. The carmakers are forced to take a place in the queue behind bigger chip buyers like Apple and Qualcomm.
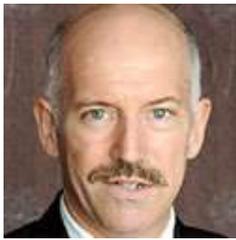
Alan Patterson

Alan has worked as an electronics journalist in Asia for most of his career. In addition to EE Times, he has been a reporter and an editor for Bloomberg News and Dow Jones Newswires. He has lived for more than 30 years in Hong Kong and Taipei and has covered tech companies in the greater China region during that time.

Hyundai, Kia say Apple car deal now off, see $8.5 billion wiped off market value

By Heekyong Yang, Joyce Lee

SEOUL (Reuters) - South Korea's Hyundai Motor Co said on Monday it is not now in talks with Apple Inc on autonomous electric cars, just a month after it confirmed early-stage talks with the tech giant, sending the automaker's shares skidding.

Wiping $3 billion off its market value, Hyundai's stock slid 6.2%. Shares in its affiliate Kia Corp, which had been tipped in local media reports as the likely operational partner for Apple, tumbled 15% - a $5.5 billion hit.

The announcement brings the curtain down on weeks of internal divisions at Hyundai Motor Co Group - parent to both automakers - about the potential tieup, with some executives raising concerns about becoming a contract manufacturer for the U.S. tech giant in a tieup reminiscent of electronics firm Foxconn's role in making device for Apple like the iPhone.

"We are receiving requests for cooperation in joint development of autonomous electric vehicles from various companies, but they are at early stage and nothing has been decided," the automakers said on Monday, in compliance with stock market rules requiring regular updates to investors regarding market rumours.

"We are not having talks with Apple on developing autonomous vehicles."

Kia shares had jumped 61% since Hyundai initially confirmed a local media report early in January that Apple and Hyundai were in discussions to develop self-driving electric vehicles by 2027 and develop batteries at U.S. factories operated by either Hyundai or Kia.

"Apple and Hyundai are in discussion, but as it is at early stage, nothing has been decided," Hyundai said, before releasing subsequent statements that removed all mentions of Apple but said Hyundai was receiving electric car cooperation requests from parties it didn't identify.

As recently as last week, media outlets including CNBC reported that a deal was close to being finalised. One South Korean report said the two companies were set to sign the deal on Feb. 17.

'AGONISING'

Hyundai is traditionally known for its reluctance to work with outsiders, making engines, transmissions and even its own steel in-house in a vertically integrated supply chain as South Korea's second-largest conglomerate.

Although shares in Kia and Hyundai had surged on news of the talks, internal opposition to becoming an Apple contract manufacturer was considerable, according to people familiar with the matter.

"We are agonising over how to do it, whether it is good to do it or not," a Hyundai executive aware of internal discussions on the tie-up told Reuters in January. "We are not a company which manufactures cars for others," he said, speaking on condition of anonymity.

Apple and Hyundai first started talks over a car partnership in 2018, another person familiar with the matter previously told Reuters. But progress was hampered by the South Korean automaker's reticence on working with outsiders, the person said.

Reuters reported in December that Apple was moving forward with autonomous car technology and aimed to produce a passenger vehicle that could include its own breakthrough battery technology as early as 2024.

Apple, known to keep product plans under tight wraps, has never acknowledged talks with the automaker about building vehicles, and wasn't immediately available for comment outside business hours in the United States.

Analysts said talks might have collapsed over leaks of the partnership plan to media, or over possible insistence by Apple that Hyundai's role in any tieup would be that of an equipment manufacturer, rather than a strategic partner.

"With numerous news reports over discussions between the two companies, which should have been held to non-disclosure agreements, it would have been uncomfortable" said Kwon Soon-woo, an analyst at SK Securities.

Kevin Yoo, an analyst at eBEST Investment & Securities, said, "It seems clear that Hyundai Motor Group has not been too happy with dealing with Apple ... They made it clear that they do not want to be treated just as Apple's supplier or manufacturer."

Opinion: The ever-present need for simplicity in tech

Even experts can appreciate a good analogy or clever context to explain what technology can do for you

By Bob O'Donnell on February 9, 2021, TechSpot

As someone who spends his life reading, writing, and talking about technology products, industry trends, and tech companies, I've endured my fair share of product user interfaces, marketing messages, and company strategies that are—how can I say this politely—stupendously bad.

Early on, some of this could be at least partially explained by the relative immaturity of the industry, the "newness" of the technology and/or the fact that certain products or solutions were specifically targeted toward a very small, technically 'sophisticated' audience.

But those days are long gone. Now, with technology products and companies getting further embedded into the general population and the overall economy, there's simply no excuse for the ongoing confusion and lack of clarity around critical technology products and trends that we're all forced to endure.

I certainly understand that things like cloud computing and all its variants, 5G, and other wireless technologies, smart home-focused developments, digital security, artificial intelligence and machine learning, among many others, are complex and can be difficult to explain (let alone use!). In addition, it's certainly fair to argue that most people don't care about the details of how these technologies work. But when a significant portion of people—even those who work in the tech industry—can't even partially explain what they are, well, that seems like a big problem.

Like many others, throughout the years as I've seen or heard these types of marketing messages, used the products, or tried to decipher the strategies, I have often blamed myself when I didn't really understand what was being said or how something functioned. I figured it was just too complex or challenging a subject to easily understand.

Technology products and services, and the trends that drive them, are simply far too important to our society for them to remain shrouded in mystery.

At this point, however, I realize the problem isn't with me—it's with the people who created the message or designed the product or came up with the strategy. Yes, it can be incredibly hard to do, but people who make the extra effort to explain difficult concepts in meaningful ways—like great teachers—can make an extraordinary impact. In fact, I'd argue that they can make an essential difference. People who don't put in the necessary effort, however, are not only breeding confusion, they are actually contributing to what could prove to be even bigger problems.

Technology products and services, and the trends that drive them, are simply far too important to our society for them to remain shrouded in mystery. Sure, I might not ever fully understand all the details of how a technology works, but if you're not able to explain—in layman's terms—the basic principles of what something is, what it does, and why I should care, then you need to go back to the drawing board. To put it bluntly, falling back on complexity is a lazy excuse. As more and more aspects of our lives, both personal and professional, are digitized, it's not just modestly useful to be able to clarify important tech concepts, it's absolutely necessary.

A big part of the problem is that most people leave out the context for how a strategy or technology trend, or even a specific product, fits in with other ones. I find that making analogies to better-known concepts or ideas can make a huge difference here, but it takes creative thinking to come up with comparisons that are meaningful.

Even an example that isn't a perfect match for how something works can still be incredibly useful if it gets the basic gist of an idea across in an easier and simpler way. Too often, people get caught up in the minutiae of technical exactness and, in the process, lose the opportunity to explain a basic, core principle. Also, bear in mind that context setting may only take a sentence or two to explain—but it can make all the difference. Think of it like knowing where a journey starts and ends and not just a detailed description of everything in between.

It's much worse to presume that people know too much, than that they know too little. Plus, even experts in a field will appreciate a good analogy or clever context setting that helps to better explain concepts they live and breathe every day.

In addition, the number of assumptions and presumptions that get made about what people believe others already know (or should) leads to huge information gaps and misunderstandings as well. While I certainly understand why people want to avoid trying to insult the intelligence of their potential audience, experience has shown me time and time again that the idea of oversimplification is a false narrative. Even among what might seem to be a technically sophisticated audience, the amount of confusion or lack of knowledge that exists on what some believe to be relatively straightforward topics is much higher than most recognize.

Bottom line? It's much worse to presume that people know too much, than that they know too little. Plus, even experts in a field will appreciate a good analogy or clever context setting that helps to better explain concepts they live and breathe every day.

Similarly, while I fully admit to being someone who actually likes to read owner's manuals, the operation of most devices and applications shouldn't require one. If people can't even get started with a gadget, program, or service without a manual, it's clearly time to start over again. Yes, good user interface design is incredibly challenging—it's clearly as much art as science, if not more—but it's also tremendously important. Unfortunately, from my vantage point, there continues to be significantly more focus placed on functionality than ease of operation these days. As tech devices and services get further ingrained into our increasingly digital lives, this de-emphasis on simplicity has already started to create gaps between people—notably between those who understand and those who don't—and as time goes on, the problem is likely to get much worse.

There has never been a product that is too easy to use or an explanation that is too easy to understand.

These principles go beyond individual products and applications as well. In fact, you could probably make an argument that the ease-of-use for individual products and services has actually been improving.

The big problem is that we're all using a lot more of them and in a lot more combinations. In the gaps between all of these products is where the biggest potential issues exist. Unfortunately, there isn't an easy way to address these concerns—though better interoperability standards for both hardware and software can clearly help—but that doesn't mean they shouldn't be receiving a great deal of attention.

Planning, building, and marketing tech-related products and services is an incredibly important, but also very challenging task. The topics and concepts they involve can indeed be exceedingly complex. But the goals of simplifying both how things work and how to explain them continue to be incredibly important ones that product designers, strategists, and marketers need to keep at the forefront of their minds.

Remember this: there has never been a product that is too easy to use or an explanation that is too easy to understand.

Issue 5 – February 2021

NEWS FROM THE IPC

IPC Releases IPC-2551, *International Standard for Digital Twins*

IPC has released IPC-2551, International Standard for Digital Twins.

This first international standard is comprised of digital twin product, manufacturing, and lifecycle frameworks. Using this standard, any manufacturer, design organization or solution provider can initiate application interoperability to create smart value chains.

Of significant use to any company, IPC-2551 provides a comprehensive self-assessment mechanism for companies to determine their current digital twin readiness level and roadmap the steps they will need to take to achieve a full digital twin approach. This comprehensive approach provides real value to companies that are in the planning stages for applying a digital twin framework to their operations.

The standard enables interoperability of all forms of processing of digital data that precisely match and represents the physical capabilities. The standard does this by defining and precisely laying out a digital twin cell-based architecture. This enables any manufacturer to create and utilize the IPC digital twin standard to represent every process and possible actions taken on a product within the manufacturing and lifecycle environment, for engineering, modeling, planning, quality and reliability analysis, simulations, and much more, allowing critical decisions for product, process, and material design to be optimized.

"Benefits of establishing a digital twin framework and the tools that work within the framework will ensure that the physical expectations will be met without the need for a physical prototype," stated Matt Kelly, IPC chief technologist. "IPC-2551 will help with optimization of processes reducing losses associated with manufacturing and logistics, increasing productivity, efficiency and cost performance," Kelly added.

For more information or to purchase IPC-2551, visit the IPC Online Store.

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International Diary

2021

5th EIPC Technical Snapshot Webinar
Registrations via www.eipc.org
February 17

IPC APEX EXPO goes virtual
March

6th EIPC Technical Snapshot Webinar
Registrations via www.eipc.org
March 17