Season 3 Episode 5 – From Hardware to Ecosystems: The Future of Digital Innovation in Kidney Care
Guest: Jaime Osborn

Len Usvyat
Welcome to the Renal Research Institutes Frontiers in Kidney Medicine and Bio Intelligence, where we share knowledge and advances in kidney research with the world. In this episode, I'm joined by Jaime Osborn, Vice president of strategy and digital solutions at Fresenius Medical Care. Together, we're going to discuss the digital effort in the medical field, where it's going and its benefits to patients and clinicians.

Jaime welcome.

Jaime Osborn
Thank you, Len.

Len Usvyat
So Jaime, as we dive into this, I think the first and probably most important question to explain to everybody is what is digital? And what does that mean? There are so many definitions, I think.
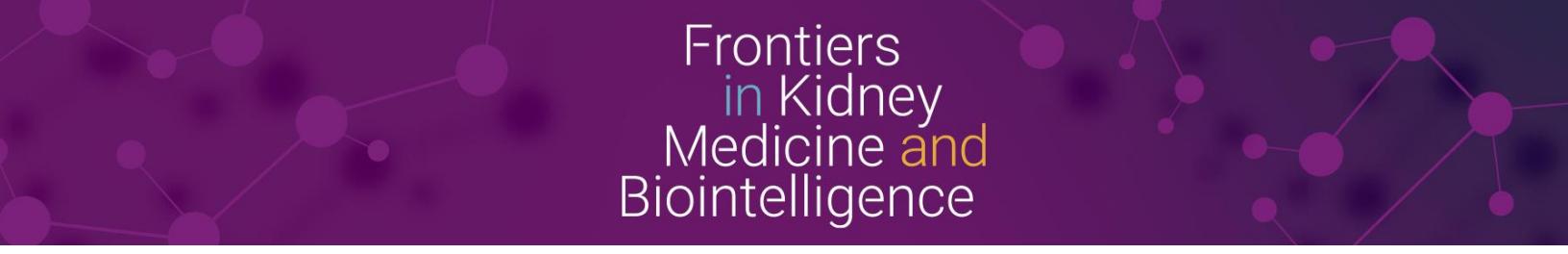
Jaime Osborn
I think you probably put ten people in a line and asked them what digital is. You'd probably get all different definitions. So, it's important that especially when you're building out a digital strategy, everyone's kind of aligned on what are we talking about when we're when we're talking digital? I think in most med tech spaces or even in multiple industries, right.

The definition of digital tends to be more looking at a digital ecosystem. Right. So, it's not just what most people go to in terms of like the digital products that users consume or the software that people consume, but it really is the entire ecosystem. And you know that that really tries to look at that dynamic of interconnected technologies, platforms, data, people.

How do we bring partners in, right, as a part of this whole ecosystem? And so, you know, typically when you talk about digital, you look at it through kind of five layers, which the first layer would be your typical IT solution. Those are the kind of cloud platforms, the APIs, the data lakes, the things that really kind of sit foundationally in the background.

And then the second thing would be what we what we as consumers, you know, it's the apps, it's the digital products. It's the services that we tend to consume more and more.

But another big piece of that is also data and intelligence. Right? So it's the entire data layer because all of these digital products are generating data.

And where are those data elements sitting on your technology infrastructure. How is it being leveraged etc. And then I think from a value perspective you want to innovate quicker, right? So as part of your digital ecosystem, you really want to also look at partners and different stakeholders. And how can they rapidly help you prototype, test, build, innovate in some of these areas within the digital ecosystem.

And then ultimately when you have a digital ecosystem, you then have to have a governance and operating model in which you're operating. And so I always kind of say digital has these five layers, right. It's the digital products. It's the partners, the stakeholders, the data, the intelligence and how we kind of govern and operate across within a company.

Len Usvyat
Different people look at digital from a different angle. And I think your explanation, I think, defines when explanation makes a lot of sense. So, Jaime, what drew you to this area? What drew you to digital innovation in that tech? I know you've your experience has evolved over the years. I'd love to hear your personal story.

Jaime Osborn
Early in my career and I, you know, I worked at Epic Systems, so was really kind of in the forefront of this. I would call it the biggest digitization in healthcare. And what I could really see was that the aspects of digital, whether that be software, right, primarily the software side of things and how we built that, it could reimagine how we deliver care and really kind of fundamentally right.

But it was a big transition, even going from paper to digital. Right. And what did that mean? And how did we kind of look at that? But I also saw how workflows could be improved. I saw how what was sometimes very siloed, lacking care, coordination, disconnectedness, how with digital, you could improve a lot of those areas.

Right? I always sometimes say, like, if you were to remove an electronic health record out of a hospital, now, would people be able to actually function? Whereas when they were making that transition from paper into, into the digital world, you know, it was the biggest pain in the world ever, right? And people would say, well, what's the value?

So, I think there's a lot of underlying things that have really come about from that implementation and that transition over time around, you know, kind of shifting. And I think within that experience, I think what really sparked my curiosity in an innovator inside of me that said, you know, how could we kind of build ecosystems and set of products?
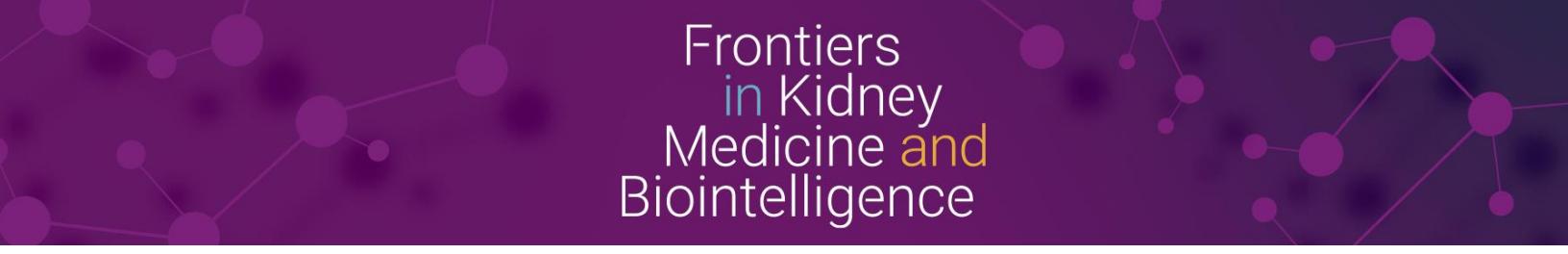
How could we look to build solutions? Because it's not just one product, it's how does that product connect? How does it interoperate? Where does the data flow? And I think it is shifting away from selling devices. So more of the hardware-based side of the world. But really looking at we can deliver value through a completely different experience. And I would say I saw the power of what shifting digital could do just in terms of streamlined workflows and how care could be delivered differently.

And I thought we need to go broader than that. And I think when the last, let's say, ten years of my career. So let's be the next level of digital transformation, so to speak, is really being driven by the shift in business models. Right? So even with hardware and software, it's how do we go to market and how do we align our business models in health care to the providers, even though we may be vendors and looking at those either, whether it's an as a service, you know that being a managed service, the financial structure in which you put that together, but it becomes less about buying a product, right, a capital purchase and owning a product, but more about usability and users and adoption within that. And I think it's made a lot of MedTech companies have to really wake up and very quickly figure out how we do not become a hardware company, but how do we become, you know, you're never going to solely get rid of the device, but that's not necessarily the core business anymore.

Right? And how is that going to evolve? And so I think those are the kinds of things that I saw early on in my career. And then as I kind of evolved and said, these are great opportunities to make major strides in health care, but we've got to kind of go to market and go and meet, meet the providers where they're at with the different business model, leveraging the innovation and leveraging the technology in a different business model.

Len Usvyat
And I do think, I think your example about what would a hospital now do if the EMR was not working, for example, for a day? I think in health care, we have a unique challenge, of course, is we can't just shut down, when something is not when the IT systems, for example, digital systems are not working, whereas I think retail for example, there's been many instances, I'm sure you've seen where something is not working in there, shutting down the whole store just because it's so difficult for them to operate.

What do you think is the primary, reason for having this digital first strategy that I've heard you talk about before? And I know you brought in a little bit earlier today.

Jaime Osborn
I think what I've seen across a lot of companies, in a lot of industries and every industry has been a little bit different at the speed at which healthcare I would say is tends to be a little bit lagging compared to other industries. But a digital first strategy is a strategic

imperative to the strategy. Right? It's not just looking at, okay, what's our digital initiative or what do we want to do in our product portfolio.

It's saying that we're going to use digital as an essential for our survival, for our growth and our competitive differentiation. And so I think when you have a digital strategy first, those are the things that you say is digital is in effect an imperative to that. Right. And it becomes a pillar to your strategy because in your overall business strategy, right, it becomes a pillar to that.

And I think the reorienting around our business models in line with the digital ecosystem, it's not I don't I don't think that you can completely innovate in digital on a digital ecosystem if you don't. Also look at the business model around that. Right? And you see that in MedTech where, you know, there was a device, there was hardware.

It was a very transactional, episodic type of purchase and a lot of software-based companies have kind of struggled to figure out where does that fit in? I think it shifting to that, let's say digital force strategy forces, I think, organizations to move away from siloed approaches. Right. So their typical silos of, you know, this business unit, that business unit, we're each generating our own products.

If you really take a digital first strategy and you employ a digital ecosystem approach, then you can't stay in silos, right? Because it's all about the interconnectivity of those products, of the data it generates of what you do with that data, how you, you know, all these different aspects of it, the connection of the front end to the back end, but more importantly, the users, right?

Whether that be clinicians, whether that be patients, and that is a real core, important move around creating those scalable platforms and moving away from siloed approaches. Right. And I think there's a lot of drivers and a lot of good reasons why companies have a digital first strategy with just where the population is at and its maturity. And you think about ten years ago or 15 years ago, even Apple.

Right. And, you know, my 72-year-old mother uses Apple seamlessly. Right. So whoever thought that would happen, it's not something anymore where we live in a digital world all around us. Right. And so, I think when you're a company and you're looking at a digital first strategy, a core part of that is, you know, it can enable your retention and growth.

It can look at customer loyalty, your lifetime value of your customers and your patients. Over time, you can look at revenue expansion and diversification as a part of that, because how you monetize on a platform like I said, it changes your entire way of looking at your business. It is a digital first strategy, is a major transformation for a lot of companies.
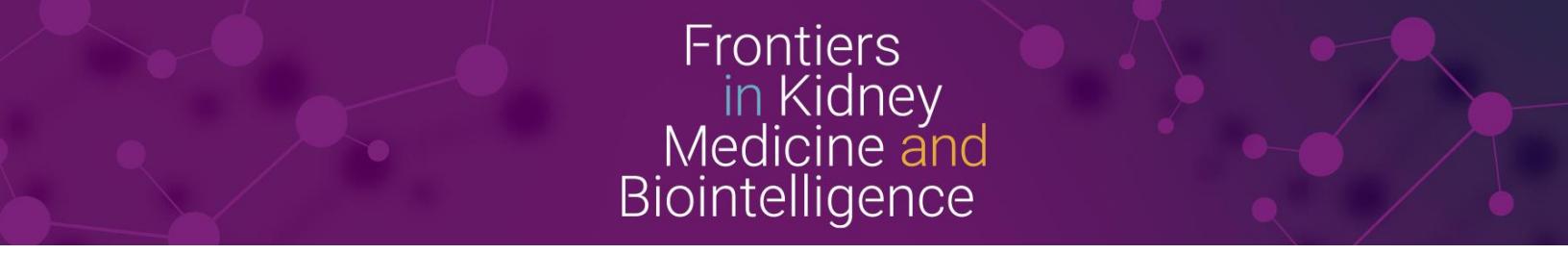
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Len Usvyat
Yeah, yeah. No, I completely agree with you. I think digital first is very important. But I do also think I often say that while let's say in any health care and certainly, large dialysis organization or a large hospital, the core of what they do is providing service. And all these digital technologies are there to empower and make whatever it is that they do the core of their business better and more effective.

I don't know if you would agree with that, but that's how I often think about it. It should be digital first, but at the end of the day, what's a service provider? So it's important that that is the core of our business while these technologies are there to power.

Jaime Osborn
Absolutely. I mean, if you're not if you're not delivering value and creating value for them, then what's the point in using them? Right? I mean, 100% agree it's the core to why we should be leveraging data, data and why those customers are leveraging the digital approach. And if it's not, if you can't measure that value and you can't see that value, then you probably won't be that successful with that digital innovation.

Len Usvyat
What do you think are some of the clearest, short-term wins when it comes to AI and data, particularly more on the MedTech side of things? And what do you think is maybe a little bit more overhyped these days? So from your experience.

Jaime Osborn
Some of the more basic things around AI in particular, workflow, and how we can save time and save steps, right. Prediction is another area. I would say the one thing that, you know, AI in the term of AI is a big hype. But at the same time, unless you have a strong foundation of data and that data is really cleaned right in, in terms of running AI algorithms, you got to run AI on top of something, right?

So the hygiene of the data that exists in the ecosystem, in the digital ecosystem is really, really important. And I've found far too often, especially in product management or in research, they can build the algorithm. Right. There's no question. It's the application and they use that algorithm. And that is very much dependent on a clean data set. Right.

And so when you think about it even in hospitals or even outside hospitals, right, outpatient. Right. Using an EHR, a lot of the data that sits in that is not always a clean data structure, right? There's a lot of free text. And so you have to be clear around where that algorithm is going to sit on, what is its purpose, what different data sources a need to pull from?
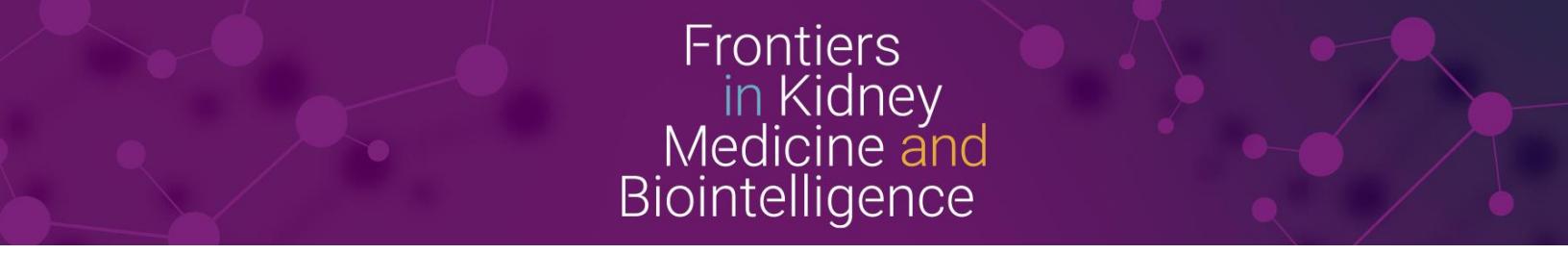
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I think some of the low hanging fruit, right where I've seen it be effective, was really around reduction in non-value-added tasks or steps. Right. So where can we save hours. Because you know we've got you know integration is also part of this too. And where can we reduce the number of non-value-added steps that clinicians have to do.

Because every additional step and every additional hour of non-value added is time not with the patient. So I think workflow where can we improve workflow. Where can we streamline workflow. Where can we reduce steps? I think I has an advantage in kind of low hanging fruit. I've seen from a clinical perspective really a mixed reaction from clinicians.

Right. So when you start talking about predictions, some clinicians will be very clear. That will say, well, you can give me the prediction, but I ultimately make the decision, which absolutely there's no question there. Right. But I think sometimes on the tech side, our minds go so far to say, well, we can, you know, we can predict, we can make decisions, we can do all these things.

And, and I don't think we're going to ever replace that clinician's role, because that's just an important part of care needs. Someone has to have their eye on some of this. But I've seen around how can we, you know, if a patient's going to crash? We've run AI models were, sepsis. Right. And hospital acquired infection.

We have all the data sets that tell us that a patient is deteriorating, but without an alert or a warning that's looking at multiple data sets and combinations of longitudinal data and real time data. And usually that real time data is another key piece of it. It's yeah, you can have your longitudinal data that you're running an algorithm on, but you need that real time data as well, because that's what ultimately, I think, gives you trust in the prediction, so to speak.

I mean, those things are all possible. Right? And I think they're great aides to many clinicians. There's, the context of let's not make it more than what it is. It's there to help us deliver better care. It's there to help us catch things that maybe humans can't because of all the data. Right?

I mean, if you think about even a clinician looking at multiple labs in correlation to patient monitoring data, in correlation to this data set, that data set that should and just the human mind and the speed at which we have to then look at all those values and determine if you can run an algorithm on that. That quickly gives you a prediction of patients will start deterioration within two hours.

Right. Or this infection or, you know, these are all signals, these are all leading indicators that there's something that we should intervene with before it happens. Right.
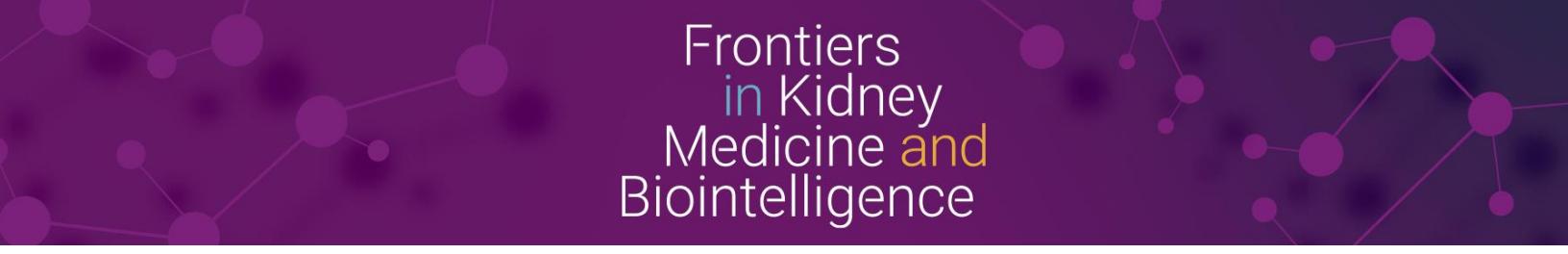
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I think those are those are powerful areas where we can use AI, but it also really comes back to the cleanliness of the data.

Len Usvyat

Yeah. No, I think it makes sense. You know, we as you know, of course, that, you know, research institute, we developed quite a lot of AI and computational medicine algorithms and, one of the questions I have is sometimes there's, there's more complexity around taking more of these pilot projects to more full-scale production. And actually turn it into something that's routinely used.

So, I mean, in our dialysis clinics, what are your thoughts about how to really have a process where this early innovation can actually turn on the AI side, particularly can turn into truly revising and changing the clinical care and how it's delivered to our patients.

Jaime Osborn

I have a strong opinion of that. Maybe it's because I came from the innovation side. I've seen approaches work and I've seen approaches network. I think the reality is the rate at which our technology is evolving. A lot of our traditional processes of how we bring things, quote unquote, to market. It's being challenged. Let's say it that way.

I think there are good structures and processes that you can put in place to enable. I would consider more prototyping, and at least in my experience, most healthcare professionals, most C-suite of hospitals, at least in, you know, in the hospital setting, they want that collaboration, right? They want that co-creation. So I would say, like if I had to kind of write a playbook on like, what is that?

What does that approach look like? Previously I've kind of used, kind of bell. Mason. Right. What's the idea? How do we seed it? How do we pilot it? How do we prototype it? Because you want to fail fast. If you're going to fail, you want to fail fast, right? You want to really ensure that you can prove desirability.

You can prove feasibility, and you can prove viability. And the only way to do that and do that in a fast setting, I think is, is really setting up a, an innovative kind of hub that sits alongside quote unquote, businesses where the traditional research and development and product management sits. So it's not like there's, you know, doing things in silos, but there's a way to, from a portfolio perspective and these, let's say, early stage development ideas to test them and prototype them.

And then once they have some legs, move them into the business, right, for full commercialization. But I think that's when you really start to say, I want to create value. You've got to start with that clinical pain point. What is the pain point you're trying to trying to solve for? What's the co-design you got to co-design with end users?
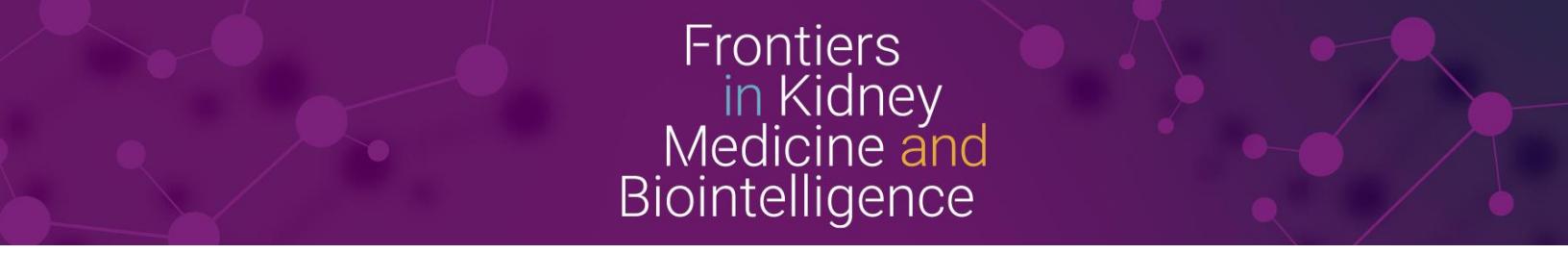
I always kind of have applied a design thinking methodology to innovation. So how are we co-creating with those end users? And you can do that in things like innovation platforms, right. Where customers can put their data sets there. And if you've got a new algorithm, you can test that, right? That's a platform that I've set up previously with customers.

And they love it. They love the ability to take some of their data sets, put it into this kind of innovation hub where, you know, you've got your set of predefined partners and you can test those algorithms to prove, you know, does it work the way we intended it to work? Does it create the value that we intended it to do?

Because I think you want to prove the value fast, right? As opposed to this length, you know, in the hardware world, you're talking three years, four years, five years, right? Every cycle to get another hardware platform out. And the rate at which software is moving is forcing the hardware platforms to also change. So whereas like, you know, I used to say to customers and C-suite that I would talk with is they're like, well, you're coming out with a whole new, you know, your kind of forcing me to buy this.

And I still have useful life in this product. And I said, unfortunately, it's not necessarily that we want to do this right. We're not trying to just because, trust me, the sustain engineering and all the costs that it costs us to, to keep up with this. But the reality is software and the rate at which software is evolving to bring you that innovation requires hardware platform changes.

And on top of it, the level of connectivity, interoperability, security also now forces hardware platforms to be changed quicker than we've ever seen them happen in the past. So in effect, hardware is becoming more of a commodity, right? And just the speed and the rate at which it changes, but it goes hand in hand with the software.

Right. And so the alignment from a product management perspective of hardware and software and how to really integrate that. And then looking at things like your, let's say advanced innovation on top of that will actually bring faster cycles of innovation. I think to many, let's say traditional med tech companies. But it's a very different way. We have to set it up and you have to think about it.

Len Usvyat
Yeah. Yeah. That makes it makes a lot of sense. And you, you brought up a very important distinction between hardware and software. And of course, software develops especially nowadays extraordinarily quickly. And so do you believe in, you know, a large organization, certainly as Philips was software innovation got a little bit separately from hardware innovation or was it done?

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You know, is there at least a kind of slightly different approach to the two, or was it usually done holistically together? It's I do view some of that a little bit as connected but a little bit separate things because of the speed.

Jaime Osborn

If I look back ten, maybe 15 years ago, I don't think it was as connected as it needed to be in terms of the roadmaps, I think that it was still very separate because they were the core business was hardware. Right. I mean, even if you think about think about the transformation that Dell went on, think about the transformation that IBM think about the transformation, you know, that Johnson and Johnson, all these like in the hardware space that was the core.

That was the bit. That's what they were made the money on. So when you have people coming into leadership saying that's not where the money is anymore. Yeah, the last 25 years of the success of the company and everything that got them to, let's say, you know, the level of growth that they had was all based on that hardware.

It challenges the fundamental philosophy of reality is you have to have both. But I think it's been a transition that a lot of companies have had to go through, because software was still seen as kind of like the side group that was working on coding and, you know, looking at looking at this cool thing. And then slowly, I would say, over time you started seeing like design coming in and UX design.

And it wasn't just about the software itself, but it was about the experience of the software and the use of it and the adoption of it. And so what I've seen, I would say probably more so in like the last 5 to 8 years, is more integrated product management teams, but also integrating services into that too. Right.

Because previously it used to be like, well, we got to maintain the hardware. Okay. Well now you've got to think about every 12 months, or you've got to think about bug fixes and you've got to think about sustaining, and you've got to think about maintenance of the software, not just the hardware. Right. And the rate at which that's happening and the cycles that's happening.

And every single time there's a new read, the software. Do you think about Apple, right. How many times is iOS coming out. And they're running those teams in parallel to the hardware platforms. But there's always a point at which we say that software doesn't work on the hardware platform anymore, and you got to change your hardware platform to be able to get the software.

Those coexisting and working together is imperative, I think. I haven't necessarily seen anyone get it perfectly right yet from a product management perspective, but I think it comes back to how you manage the portfolio and what incremental improvements on
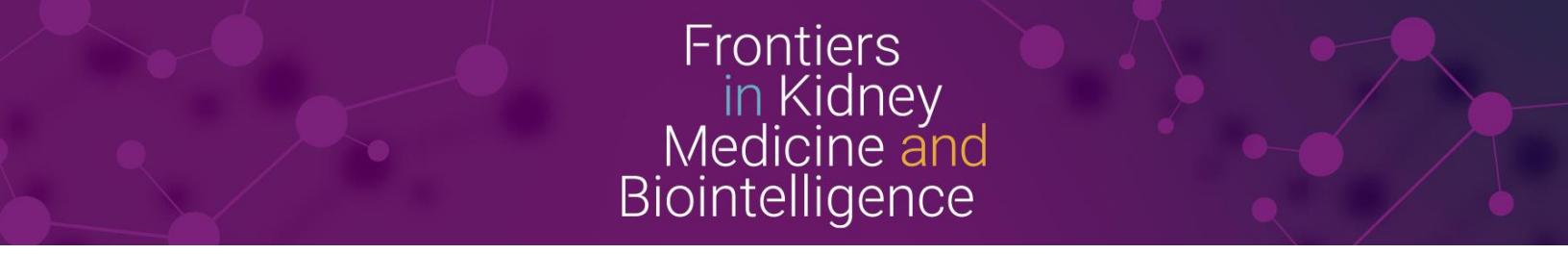
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that portfolio are hardware related, hardware dependent software or service. And I think that's the new space also from a service side, because now with software and also different business models, there's a whole new opportunity to also look at services related to education and maintenance and analytics and usage and adoption and all kinds of other things, which are new services which a lot of, you know, services is growing significantly.

And what you the services that you can develop outside of just the traditional hardware maintenance is extendable. Yeah. Right. And that's kind of a whole new space with software to really look at that development as a part of that.

Len Usvyat
What do you think about partnerships? And, you know, I think there's often these questions about do you buy it or do you build it yourself? Do you have partners? And if you do, then how do you do this? And there's also a question about local versus global. You know, for seniors, medical care of course, is a global organization, but the needs are often very local.

And so I'd love to kind of hear both building versus buying versus partner. And also a little bit about the local and global nature of things.

Jaime Osborn
The first question of building versus buying. A lot of companies who started off as, let's call it, heavy engineering-based companies who rooted in hardware, which, let's be honest, most MedTech, that's where it started. They have a different, I would call it legacy. Then let's say a startup that started in Uber, right? That was always software based, right?

That took an idea and a concept. And the reason I think behind that is because there's strong engineering practices from the legacy of the hardware. And so I've always found that you got to kind of get over the hurdle, or I would call it the insecurity of we're not building it because if we don't build it, we don't control it.

And that is a natural fear. I think that sits in many engineering teams, especially when it was the core business based on what they built. Right? It's what they know. It's what they're comfortable with. I think when you look at a lot of let's say, real software based that maybe didn't have as much hardware, sure, there's a server, but now with cloud, right?

I mean, it's, let's say software predominant companies completely different mindset business models. If you look at things that like epic did. Right. Oracle, other software providers in, in health care, they came at this not from, protect our legacy, but they
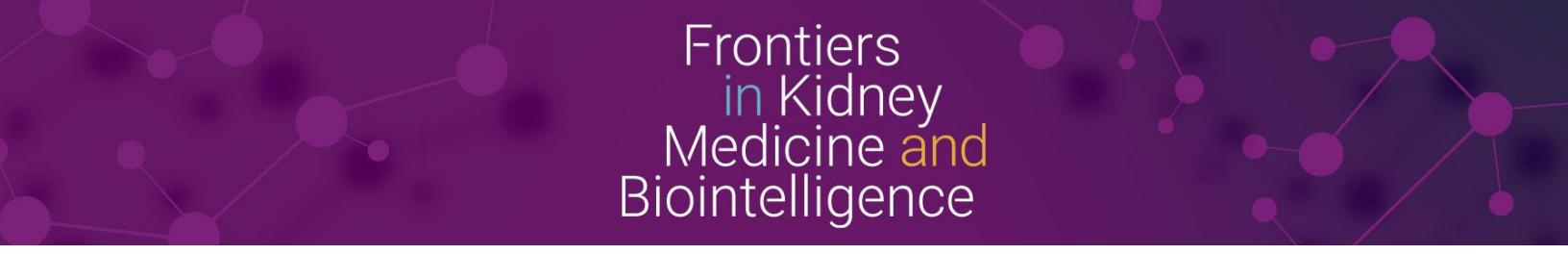
came at it from a let's create an open API where we can create an environment for other staff.

Because, let's be honest, just because we don't want them to be there, they're not going to be there. They are going to be there. There are always going to be startups with ideas that can help to improve. And I think it comes down to a lot of these software companies. And that was one thing I did appreciate about epic.

When I was there, Judy was very clear about what they did right and what they didn't do and what they didn't want to do. There's a point at which you can never stop in development of software, right? Because your users will continually ask. And the question then becomes, where do we want to play? Where do we have to play, and where can we partner?

Because we don't need to play in that space, we can share the revenue that comes out of that.

And it depends on how you set that system up. So I've always been impressed with, let's say, the more advanced companies that don't have that legacy hardware and are really anchored in software of a real open ecosystem under which they welcome innovating partners with them to bring more value to the customer. And when you do that, customers see that right.

And that that also gives you brand recognition around that. And customers appreciate that with their, you know, their main providers around that software. So I think when you talk about innovation, I think the days are gone where we build everything in-house because we can't be fast enough. So we have to think about our platforms and our ecosystem in a way, which is where do we have that opportunity for open API, where we can create a sandbox, right.

For other innovative companies, startups, right to leverage and to be part of the ecosystem but not necessarily be seen as a threat or something like that. Yeah.

Len Usvyat
Yeah. No, it makes sense. And I think, you know, we at some point in our team, we develop this digital scribe for our clinicians. And I think it was a very successful pilot. But I do think there's often that question in my mind, is this really a place, something that we should be developing versus partnering up with somebody or buying a tool from somebody?

Because lots of work, of course, has been done on digital on these digital scribes. So I think it, I think it, if that makes sense. And we know researchers. Yeah, we have a lot of
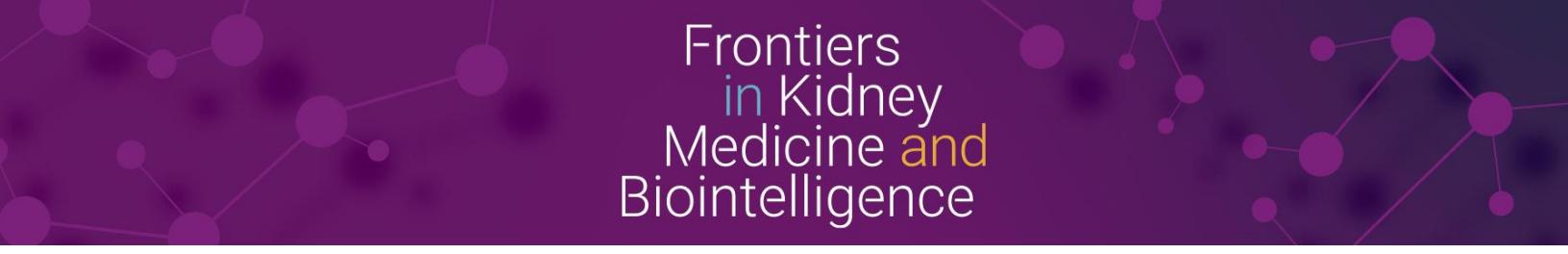
scientific connections, and we you know, we have symposia, we have various other methods of sharing information that we do publishing about it.

I personally think it's very important. I'd love to hear your perspective. Being in the medical field, the importance of the scientific connections that we have built over the years.

Jaime Osborn

Personally, I think it's imperative, I mean, I spent, as you know, 20 years at Bell Labs, right? Our research team was extensive because I think innovation was very much in DNA. There was quite a lot invested in research, which was outside of our businesses, traditional product management and R&D. And that was our pipeline of innovation, real, let's say, game changing innovation.

That was the team that was working on that pipeline. And their connection to the clinical and to the scientific community was imperative, because without that. You may have an idea, but you haven't been able to really vet through the clinical value or the clinical impact of what you may think is a great idea when you're selling to clinicians or when your key users are clinicians, their willingness to pay and their ability to pay is going to be dependent on.

Was the research behind this that said that this this would actually help or this would create a better outcome? I don't know how you create an engine of innovation without a strong research team. That is, you know, really working closely with the clinical community, but doing that clinical research outside of a product, outside of right, that that's where some of the great ideas are born.

Or I like to say, the magic wand of like the what ifs. What if you could do this? Or what if you could do that? What if you could do that? Let's go. Let's go test that. Let's go research that. Let's go see what clinical research exists out there. And there may be clinical research finding paper okay.

So, what do we do with that. Right. And so, I think that it's keeping that agnostic gives you credibility with clinicians. At least that's what I found over the years.

Len Usvyat

I do think it's a very healthcare specific issue. I'm not sure if you're developing BR apps.

The opposite of that. The scientific community connection is critical. But no, it makes a lot of sense. You know, for organizations like Philips that is very global or Fresenius Medical Care that is also very global. How do you address that? Both global and local nature of organizations.
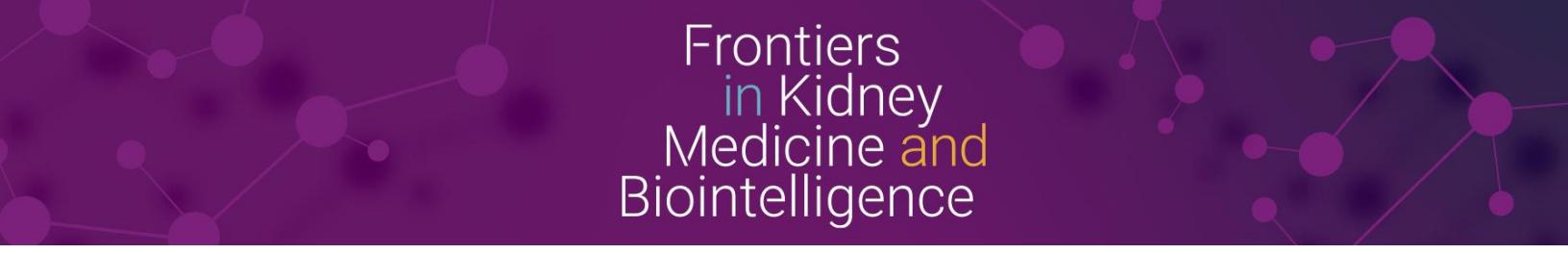
Jaime Osborn

Having had global roles pretty much my whole career and also led a global product management team, I would say the right answer is we designed for Globality with configuration for local.

Right. And there's always going to be different local workflows. There's always going to be and I'm always kind of in two minds of things because having worked with hospitals and physicians all over the world they will always say, oh, it's different here in this country. Oh it's different here. Or we do it like this. We do it like that.

If you just start from a problem, need right and translate that into the jobs to be done.

Many of the problems, many of the needs are the same. Right? I mean, there's a lot of similarity. You have to be careful how much you say that too, because you know, there's that they believe they're unique. And I would say, is it that you really need a different product or that you need to has in your architecture a level of configurability.

To adapt to some of the different workflows? Right. That's not necessarily a different product. That's not different necessarily. But I think again, it depends on what levels you configure. Right? I think more, especially in digital, you try to stay away from customization. Most companies try to stay away from customization because it's literally death to try to go down that road.

But there's always in how you design your platforms and how you determine your software code and what you turn on, what you turn off. You build the features and the functions in there, and you then apply them to the region or apply them to the localization. I always say you, you design and build for the world or whatever markets you're focused on, but you have to build in that flexibility to be able to turn things on and off, and then have your commercial model also support that, right?

So then this is where you get into your localized pricing models and, you know, different things like that and where customers will see value. You've got different health care systems as well right. In terms of UK, Australia their things there's an element of you can design a foundation, but you have to build into the architecture, the configurability and the ability to turn things on and off.

I mean, Microsoft does not build their software for every single region in every single country, but what they do have is a very strong platform of features and functions that they can turn on and off, depending on the application, depending on the offering, depending on the package, depending on the country. Right. And so it's that in that configuration layer, I think that companies sometimes miss the boat and then they get they get stuck in that I've got to go and create all these modifications to the software
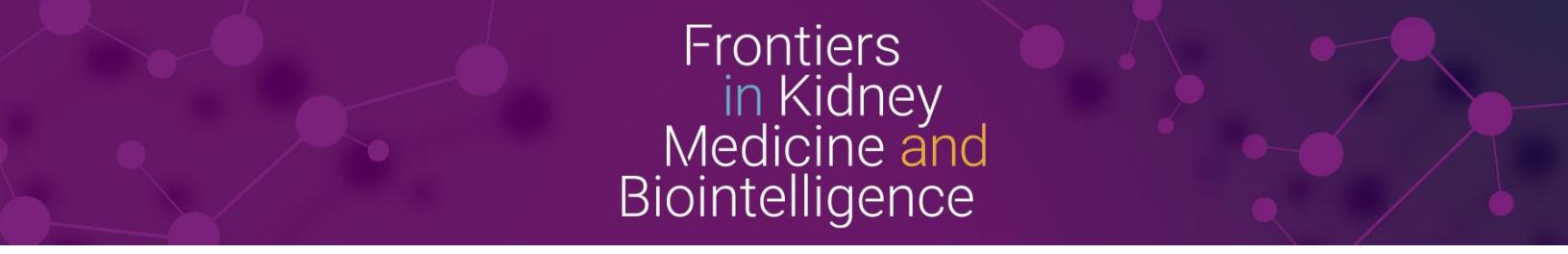
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because the local users are asking and I would say, well, if that's the case, you didn't necessarily architecture platform in the right way to begin with.

Len Usvyat
First, I want to thank you. Because I do think this is a wonderful conversation and I think no healthcare company in my mind, I think can survive in, in the next 5,10, 20, 50 years without embracing this digital first strategy. So, Jaime, thank you very much for your time.

Jaime Osborn
No thank you. Thank you, I really appreciate it. I think it's bringing more attention to these types of things, is what I think helps, individuals and companies help. So I appreciate the appreciate the dialog and the discussion and bringing some of these topics up.

Len Usvyat
And thank you to our listeners for joining the Renal Research Institute for this episode of Frontiers in Kidney Medicine and Bio Intelligence. We invite you to connect with us on our social media channels and stay tuned for the future episodes as we continue sharing insights and advancements in kidney research.

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