

Market Hunt S02 Ep03 - Hamid Nach Transcript

Thierry Harris: Hi folks, Thierry Harris here. In this episode of Market Hunt we are going to learn about Fintech.

Hamid Nach: Fintech empowers new business models that create value for customers and allows small companies to compete in an industry that we know has been so far dominated by big financial institutions.

Thierry Harris: I believe that Our ability to understand the Fintech industry is a step towards understanding the transformation of the post industrial economy to the digital one.

As traditional banks open up their APIs there are massive opportunities for growth in all financial service segments. An emerging ecosystem of fintech companies are all pushing towards servicing a clientele that places good customer experience at the top of their priorities list. Whether it's choosing where to get loans, transfer money, invest, deposit savings or pay bills, the bank of our parents' days are gone for good.

This dramatic transformation impacts capitalism as we know it and it will influence the way all industries do business down the pike.

On part 1 of 2 in this Market Hunt Fintech series, we examine the foundations of the Fintech Industry ecosystem with University of Quebec Professor Hamid Nach, stay tuned.

[intro song music]

Nick Quain: Entrepreneurship is hard, you need to have support there.

Andrew Casey: We fundamentally have to learn how to live our lives differently. We can't keep going the way we have.

Thierry: If you had all the hours in the world, which we are only limited to 24 these days, so far.

Marie-Eve Ducharme: Actually we were wrong, [chuckles] that's an incredible market.

Rune Kongshaug: I fall in love, easily.

Thierry: True. We're coming up with some pretty interesting ideas here.

Andrew Casey: We've solved everything,

Thierry: [chuckles] We've solved it all.

[end intro song music]

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Narration: And now a message from our sponsor, [IE-KnowledgeHub](#). IE-KnowledgeHub is a website dedicated to promoting learning and exchanges on international entrepreneurship. Watch Video Case Studies, listen to podcasts and much more!

If you are an education professional looking for course content, an academic researcher seeking research material, or someone interested in business innovation check out le-KnowledgeHub.

le-KnowledgeHub focuses on innovation ecosystems and firms who commercialize their technologies in international markets. Let's listen in to a [Video Case Study](#) featuring Nuvu cameras.

Marie-Eve Ducharme: We were working together for 6 years, and I was managing his projects. I saw the first data of Olivier's invention and we decided to present his data at an international conference in astronomy.

Narrator: That's Marie Eve Ducharme, CEO of [Nuvu Cameras](#). Nuvu makes the world's most sensitive camera, capable of seeing a single photon of light. Ducharme discusses the origins of Nuvu, which she founded with her business partner Olivier Daigle. Nuvu's technology attracted interest very early on from NASA.

Marie-Eve Ducharme: They wanted a prototype as soon as possible because they were trying to have those performances for years, and they were not able to do it. We knew at that time we had something interesting.

Narrator: NASA was interested, and thus Nuvu managed to overcome the first hurdle faced by many emerging technology companies, solving a tangible problem their clients were facing.

Marie-Eve Ducharme: In the astronomical field, they are perfect partners in order to do some research and development. They want to have a top, the top technology all the time. so they are going to pay for having you to develop at some point the limits of your technology.

Narrator: The astronomical field offered Nuvu some great opportunities, but how could they commercialize this into a full blown business?

Find out more at the end of the show. To checkout the Nuvu cameras video case study, visit ie.hyphen.knowledgehub.ca

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Thierry Harris: The emergence of fintech in the consumer-banking space is pushing banks to transform the very essence of who they are and what they do. The digital first model has changed banking institutions forever. Smart Digital Platforms power superior user experiences. Banks are attempting to update themselves and adopt a more technology-based consumer-centric approach.

Canada's highly regulated banking industry is robust. The Canadian financial system is working as it should. It's providing credit, liquidity, payment and settlement services necessary to address the economic impacts of COVID-19, preparing for the economic recovery to follow. Canada's key financial institutions are strong enough to deal with these challenging conditions, including what [The Bank of Canada has coined "operational disruptions."](#)

But this system only works if there is money in it to back it up. It's unlikely that a large number of Canadians will shift significant portions of their finances outside of the top 6 banks, anytime soon. Fintech adoption rates jumped from just 18% in 2017 to 50% in 2019. That's still fourteen points under the world average which sits at 64%.

Fintech companies in Canada are at a distinct disadvantage when competing with these behemoths, as are the consumers demanding for more user friendly services.

But the upside is that for the banks to remain relevant, they have to adapt to technological advances lest they have their market share in various sectors poached by non-banking entities. These entities have embraced fintech to a more rapid degree in their customer interface than traditional banks have. This advantage will only increase their market share as banks lose customers seeking better user experiences.

Regulators are enabling this emerging market by opening up lending markets, creating fintechs aimed to foster things like peer to peer lending. These have been legal in the

U.K. and United States for over a decade with mitigated results for the companies engaging in this form of business.

In order for us to appreciate the opportunities and challenges faced by the banking industry with regards to fintech, and for students and entrepreneurs wishing to know more about this field, we've invited Professor Hamid Nach, from the University of Quebec at Rimouski. Nach is the co-founder of [Accent Numérique](#), a group focused on digital transformation in organizations, and is co-founder of [FinteQC](#), who's 2021 conference dates will be included in the show notes.

Let's listen in to the conversation:

Thierry Harris: Thank you so much for being with us here today. Tell us a little bit more for the uninitiated, Fintech. What is it exactly?

Hamid Nach: Fintech refers to an industry, in fact, that uses these emerging technologies to offer innovative financial services to the customers.

[music interlude]

Fintech empowers new business models that create value for customers and allows small companies to compete in an industry that we know has been so far dominated by big financial institutions.

[music interlude]

Thierry Harris: I asked Professor Nach what the impact was of these disruptive technologies?

[music interlude]

Hamid Nach: In the early days, everybody was talking about disruption, someone even a bit further announced the death of established banks and insurance companies as we know them. Well, that didn't happen.

Within a couple of years, the discourse of disruption has changed from disruption to one of collaboration, of partnerships because, after all, incumbents and established banks quickly grasped the challenges, as well as the opportunities and started investing into this industry.

[music interlude]

What we see now is, yes, there are emerging Fintech companies who became important players in the Fintech ecosystem, but we also see established financial institutions embracing the Fintech either by digging their own path through innovation or by building strong relationship with a startup. The idea is that we have moved from the discourse of disruption to one of collaboration and partnership.

[music interlude]

Thierry Harris: It's a bit simplistic to say that banks all of a sudden were in Cum-Bay-Yaa with aggressive startups. It seems like instead of competing with banks on the user end, fintech startups are enabling Canadian banks to become more efficient on the back-end. We'll have an example of this in Part 2 of our fintech series, featuring a fintech startup company called [Manzil](#).

[music interlude]

I asked Nach what some of the market drivers were for user adoption of fintech technology.

[music interlude]

Hamid Nach: Well, that's a good question ...definitely technologies, such as artificial intelligence, mobile technologies, the web and cloud computing helped.

It's only a part of the story because there are at least two other factors that need to be taken into consideration. First, the 2008 financial crisis, and the second is the customer expectations.

If we go back to the 2008 financial crisis which have somehow shaken the trust, let's say, of customers into the financial institutions, and people believe they deserve better. It came to no surprise, in fact, that many of the finance experts who were fired or laid off during this period, built their own Fintech companies tapping into where the banks have failed and it worked.

The first thing is that the 2008 crisis has shaken the trust in the financial system, but that challenge became an opportunity. The second thing is that in terms of customer expectation, they have certainly evolved and definitely not at the same pace as what the establishment's offered.

The customers became used to immediacy, to transparency, and value with the presence of the mobile, for example, and this is exactly what the Fintech companies offered, immediacy, transparency, and value. When it came to payment or investments or in saving, for example, they offered services that are frictionless.

It was natural for the customer to adopt and to see, for example, the adoption rate of these innovative solutions got higher year after year because there was in value there.

Thierry Harris: Well, it's very interesting to see that the technological curve happened with the Big Bang, I guess you could call it, with the initiation of the, the Great Recession.

At the same time mobile technology was becoming more and more present, people wanted to do banking on their phones. They have some different expectations in terms of value, transparency, their savings, frictionless transactions. What kinds of problems are the Fintech technologies solving for their customers?

Hamid Nach: I can roughly categorize these kinds of problems into two segments. One segment addresses the end customer problems and the other segment addresses the banks and insurance companies' problems.

For the customers' problems, we can see that as a kind of business-to-customer or B2C or business-to-customer business models, Fintech companies who are operating in this model or tackling this challenge, offered direct financial services to their end customers.

These services may be related, for example, to payments or borrowing or wealth management and so on. Some Fintech companies may even operate according to what we call a B2B2C model which means business-to-business-to-customer. In this case, what they offer is this kind of service to an end customer, but the service per se is offered from the providers. Some even refer to this business model as the way a white label model.

Fintech companies in this segment address some problems that are pertaining to the operations of banks such as, for example, credit scoring or identification, cybersecurity, regulation, and so on.

[music interlude]

Thierry Harris: It's really hitting two different segments, as you mentioned, that the end-user problems, in essence, the customer who are using the mobile phones are the end-users who are clients of the banks. You mentioned that sometimes, they white label them and that goes well with your collaborative idea as opposed to pure disruption when they're offering their technology and it's being distributed by the multinational banks that are there. Very interesting. They're also solving the intra-B2B issues as you mentioned, credit scoring and identification. Then, they have an impact on the behavior of their end-users.

Hamid Nach: Definitely.

Thierry Harris: What does Fintech change in the behavior of its end-users?

[music interlude]

Hamid Nach: Fintech companies are, in fact, influenced by customer behaviors as they design financial services that meet their expectations. We should keep in mind that at the same time, people's behavior is shaped by these services as they evolve and as they adopt or they are adopted. Let's give an example. If a person opts, for example, for a budgeting tool that track spending, manages investment, manages credit score, and so on, then, this person who adopts this app or this solution, supposedly, will make decisions based on the information he or she has.

If you add a layer of gamification, which means a person earns points when he or she hits some predefined targets, then this opens up new ways of behaviors. As the person is more aware of his or her spending, it is by the same time, more guided by the logic of the gamification. Then, of course, then we would witnesses how Fintech can shape customer behavior and which I have provided just an example how a Fintech app or Fintech solution can can affect customer behavior.

[music interlude]

Thierry Harris: The study of gamification of services with customers earning points and rewards is still in early stages.

Much more research is needed in this field to see how gamefying financial services could impact lending, insurance, investments, and non-traditional areas such as when government provides credit to unemployed or retired persons. We are just at the beginning of these conversations which imply all sorts of possibilities for cross-sector collaboration between Fintech, InsuranceTech Artificial intelligence, and Video Gaming industries.

This notion of gamefying services fits perfectly into the mindset of millennials and zoomers. These people grew up on video games and could be influenced into adoption of financial apps that emphasize elements included in gaming.

Stay tuned for more on this in future episodes. Right now, let's get back to the Fintech ecosystem. I asked Nach to elaborate on this.

Hamid Nach: The Fintech ecosystem is very diverse but there are some key players that are part of it. Of course, there are the Fintech startups, which are driving the change in the financial industry. Of course, there are also the incumbents, the established banks and insurance companies who have been around for decades now. The incumbents are key players because they become overtime partners. Our Fintech startups would naturally consider amount of key players.

Most of them have, by the way, innovation labs and which we can consider as key players as well because they drive innovation within these institutions. Some of them, the innovation lab work closely with Fintech startups or other labs to develop their own innovative financial services. Of course, in addition to that, there's regulators. Regulators are, in fact, government institutions whose mission is regulate the financial sectors.

There's, of course, the investors and accelerators who are also key players. The last but not least, is universities because I believe that universities have a major role to play in terms of education, and in terms of research as well.

[music interlude]

Thierry Harris: Nach is part of a growing group of scholars working on fundamental research in this budding industry. With the market value of big fintech companies reaching 1 trillion in 2020, more research is needed at the university level to meet with employer demands in this area. Nach organizes a yearly fintech and insurance tech conference, FintechQC to help bring together diverse stakeholders in the industry. He elaborates:

[music interlude]

Hamid Nach: So definitely we need education programs. We contribute to the community by this conference because what we want is bringing together people from different spheres of different tech ecosystems.... researchers, PhD students, and master's students, entrepreneurs, CIOs.

All these partners can discuss and share insight, share experience, network, and learn from each other. This is the idea behind the Fintech conference, and we have been succeeding so far. Definitely, there are room for improvement but we have been succeeding right now so far to bring this community and have a common ground between researchers and practitioners alike.

[music interlude]

Thierry Harris: It seems that the diversity of points of reference, as you can call them, whether you're dealing with IT specialists, whether you're dealing with finance specialists, whether you're dealing with marketing specialists, whether you're dealing with consumer behavior specialists, or whether you're dealing with innovation specialists, really bringing a diverse set of backgrounds education-wise, industry experience-wise, that seems to be what the university has, that it can do. You seem to be doing that with your initiative there. Thank you for doing that, that's really interesting.

In terms of marketing Fintech, banks have a certain market, it's people with money, obviously, that have money to put in a bank that they're going to go after. I remember in the early stages of cryptocurrency, with Bitcoin, some of the arguments that the entrepreneurs were giving or saying, well, we have X amount of billion people on the planet and X amount of billion people who are unbanked. It was a big driver to have investment in some of these early startup companies. However, they've quickly realized what the banks might have perhaps known all along is that if the people don't have any money, then they might not be the right clients to go after.

In terms of marketing solutions to clients, how are Fintech companies approaching this? What are FinTechs doing to market their services to their clients?

[music interlude]

Hamid Nach: Thank you, Thierry for the question. That's a good one because as any entrepreneurial endeavor, you know that the challenge is how to get clients and grow the client base, and how to build trust. Some startups are doing the old way, by knocking the doors with incumbents and showcase their products, hopefully, to convert them as clients and it works. Others invest in what we call in content marketing and into educating their potential customer, for example, by webinars or blog posts or videos.

Other Fintech companies may choose to showcase their products in conferences, for example, and in national and international Fintech oriented events...These companies will use their network to promote the activities and the product of the startup. At the end, it's a network that's promoting itself.

Thierry Harris: Some of the main technology drivers behind Fintech's impact include Artificial Intelligence, Blockchain technology and Robotic Process Automation. Perhaps no other industry has been impacted as much by the technological advancements in these fields. Big tech's technology advantage here has proven too tempting for them to stay on the sidelines. They've dived in and are making waves. Are payment processing Services like Google and Apple Pay the beginnings of future full fledged lending and banking services to follow? Time will tell.

I asked Nach about the reasons behind big tech's move into this field.

[music interlude]

Hamid Nach: Well, the first thing is that they have deep pockets, [laughs] they have a budget to do it, and they have the team, the expertise to do it, but the one main thing that they have, they have the data and they have data about every one of us. Let's take, for example, Amazon. It's easy for them to tailor or to create a product that is tailored to their customers. They have the budget, they have money, they have data.

Some people might refer to that as the Uberization of money, but anyway, that's the debate we can continue and we can go into that. Since these big companies have the resources to build such apps and they are in the digital economy, naturally, they invest and take that code.

[music interlude]

Thierry Harris: With their large user base and data on every one of us, big tech seems poised to pursue the financial services market for some time, if they aren't broken up by regulators beforehand. Regulators therefore will play a key role in shaping the future of Fintech. Nach elaborates.

[music interlude]

Hamid: that's an important question because regulators have a key role in driving innovation. Some of the regulators have built even what they call regulatory sandboxes. This regulatory sandbox allow Fintech startups to grow in full compliance with the regulation.

[music interlude]

Thierry Harris: In 2017, The Canadian Securities Administrators launched a regulatory sandbox to nurture innovation in the financial services sector.

The "sandbox" concept allows financial services firms to test innovative products and services without requiring full regulatory approval in a way that also provides investor protection.

For example, firms may be allowed to test innovations with a limited audience, or under a time-limited exemption. Canada's first province to adopt a sandbox was Ontario, followed by British Columbia and Quebec.

The CSA's regulatory sandbox is open to innovations in a wide range of areas. This includes models that utilize artificial intelligence (AI) to generate trading recommendations, blockchain-based businesses, regulation technology ventures and other innovations. Provincial and Federal regulators have signed deals with the United Kingdom, Australia and most recently Taiwan. For more on regulatory Sandboxes see the episode links section on this episode's show page. Back to the conversation.

[music interlude]

Hamid Nach: Some may think that regulators are a barrier to innovation but, at the same time, we have to keep in mind that the regulators have a key role to maintain in the stability of the system because when things bounce back, they stand to protect the

customer. We should be also considering regulators as the driving force of Fintech innovation.

Thierry Harris: Well, that's always the question. Again, going back to the cryptocurrency, we've had a few examples even on our IE knowledge hub with the Bitaccess case, where they were a young team who were building a Bitcoin ATM, and we asked them the question back in 2014, "Would you like this industry to be more regulated?" The answer from everyone was really at that time, yes because it gives it credibility. It lends it trust in terms of the user adoption as well.

As we know, as you're saying that regulation does help drive innovation, creating those special economic zones as we see in some places in China as well that they have them there. That would be very interesting to see what the innovation is in that regulatory framework to help drive that innovation. What is open banking?

Hamid Nach: Well, open banking is a hot topic in the financial sector in the last few years. Everybody's talking about open banking. When we'll be having the open banking particularly, the one in Canada, but first, what is the open banking? Open banking, let's say, is a kind of practice that consists of open data by banks. That means making data available for other stakeholders to process it and create a new value out of it.

The most advanced form of open banking is what we see, for example, in the United Kingdom. What happened there is that the government has provided established banks with a fixed deadline to open the data, of course, yearly, and make that data available to the other stakeholders. Fintech companies, for example. In this form of open banking, the bank then becomes a platform where customers and Fintech companies meet. Customers trust their banks with their financial data and Fintech companies build added-value services based on that data.

Think of it as a bank becoming an app store, probably this easiest way to understand. Think of it as an app store, the bank becomes an app store. You subscribe to the bank and then you choose whichever app you want to install in use and each app represents a particular financial service, for example, one of payment or saving or investment and so on.

This kind of banking cannot occur if the bank does not open its data in the first place. They open their data with technologies called APIs, that's application programming interfaces, and there are some-- That's extreme way of doing open banking, but there are some conservative forms of doing open banking, which is one we can say we're doing in Canada in which the banks, for example, open their data only to some predefined partners. For example, to probably a Fintech company. They can share their data with a Fintech company they have acquired or to other banks, for example, for payments, settlements, and so on.

Some people say, well, that's not really open banking. We have been doing this for decades and cannot call it open banking but because-- Still, open banking, we can see it as many levels. The most extreme one is when the bank opens its data to partners. The most conservative one is a bank open its data only to some predefined partners through secured connections and secured platforms. This is what open banking is all about.

Thierry Harris: I want to get this clear, then. Open banking is something where the banks have collected massive amounts of information throughout the years on the consumer behaviors of their clients in terms of spending, what they're spending on, how much they're saving, the average credit scores of everyone, what's the average indebtedness, I guess, you could say is one of them, banks own a lot of houses and a lot of real estate and are partners in that, certainly.

You're saying that in the UK, they've begun to set a deadline in terms of having the banks open this up completely so that the Fintech ecosystem can take advantage of this data, and then offer new apps and services based on the trends that this data highlights and are able to then deliver more targeted services to the different stakeholders that are in that ecosystem, be they the banks themselves, or the end-users. That in Canada, we're not at that open stage yet, in the sense that we're still maybe peeking through the window a little bit, we've opened the curtain, but we haven't opened the full window yet.

Hamid Nach: The way you said it is the right way. In Canada, as you said, we're not there yet, but there's some discussion of these committees. Even at the federal and provincial governments, there are some talks, how can we make the open banking the Canadian way. I think it's a work in progress. Definitely, something to watch in the coming years. Definitely, we will see a Canadian version of open banking. Probably not the same as Singapore or United Kingdom, but definitely there's one coming. We will see how it looks like in the coming years.

Thierry Harris: Fascinating stuff. Really interesting. What are some of the drivers for this open banking? Is it about money and having more distribution equitably throughout the population? Is it for access to microcredit loans? Is it for better credit rating scores or more accurate ways to measure how likely people are to repay their loans? What's the driving force behind this idea of open banking?

Hamid Nach: That's all you said Thierry . Because we're talking about open banking because there is definitely a value for customers. When a bank open its data through APIs, as I said, and it becomes a platform-- By the way, we call this process platformification. The bank has a platform, some people call it bank as a platform, others call it platformification. It's all about a bank becoming a platform and let the

Fintech companies build and propose services and apps and financial services based on the data they have.

What happens is that when we create new intermediaries, because I'm talking here about the Fintech companies, will tap into this data and propose financial services. What you would see is that we create new intermediaries, we create value from that shared data and these intermediaries are, of course, Fintech companies who tap into this data and propose financial services. It's hard for the bank to beat all those players out there. I think we agree.

The idea is that, as you know if you cannot beat them then join them. The idea behind platformification and sharing of data, it's all about the customer at the end. Let the customer choose the best offer out there.

[music interlude]

Thierry Harris: Of course one big point we must mention is that banks need customers consent before sharing any of this data. The UK system is opening up based on this shared consent keeping customers in the loop.

Open banking or open finance is about banks and fintech using a common set of standards to improve financial outcomes for their customers. To do so fintech and banks share data on transactions that occur within their ecosystem.

As the number of people using open banking apps and services continues to grow, the industry is arguing that it can provide value for users using the data acquired from their transactions on open banking platforms.

From a user standpoint imagine being able to switch from one financial institution to another without any constraints? Think about that.

Back to the interview.

[Music Interlude]

Thierry Harris: .A trend in innovation, I think, not only for the Fintech industry, I see that happening also in the life sciences industry with some of the ways that the big multinationals are also opening up their innovation streams, simply by setting out, "Here's the problem, go ahead and help us find the solution." If they can gamify it on top of that, even better. That's really cutting edge stuff.

We're going to talk about the promotion of inclusion in the financial system. what does inclusion mean for that, and why is it something that is important?

Hamid Nach: Despite the fact that it's almost obvious that most people can open a bank account to start paying with a debit or credit card, the truth is that there are millions and millions of people, even in developed countries, who cannot have a bank account or borrow money, for example, because they do not have a credit history, for example. You may also think of people in some regions in the developing countries in which there is no solid IT infrastructure, for example, to support banking operation.

You may think also of refugees or even some group of people that cannot use some forms of financial services because of their religious beliefs. Think also of all the workers who want to transfer money abroad to their families and cannot afford to pay the transaction fees that bank charges. Think of all those people.

These people are referred to either the unbanked or the underbanked, as you said earlier, and unbanked and underbanked people are often under the radar of the established banks and the insurance companies.

Luckily, what we see is that some Fintech companies are taking these challenges, and these gaps very seriously. There are many Fintech startups that made it easy for these people to do what the rest of us considers just another daily, weekly, or monthly routine. This is what our financial inclusion is all about, to allow those people to have the same services that the rest of us can naturally have.

[music interlude]

Thierry Harris Super interesting there. Why is this something that is important? We talk about capital all the time, capital, capitalism, people capital, people move around from one regulatory district to the next. ...hard to do that, to move from one regulatory district to the next and have your credit rating follow you, certainly. These are important considerations in our globalized society, as people move from one country to the next, as people are working sometimes for three years in one country and then moving their families and everything going to a different country.

Why is this inclusion and this mentality, an important one to have and to promote, in your opinion?

Hamid Nach: That's because the inclusion is the universal value. Throughout history, civilizations are admired for considering inclusion as a core value. I believe there is strength in inclusion and financial inclusion is no exception.

[music interlude]

If you had all the hours in the world, which, we are only limited to twenty four these days, so far.

[music interlude]

If you have questions that you want to throw out there to the audience, what kind of things do you think the students out there could be looking at in terms of studying Fintech and the ecosystem there?

Hamid Nach: Thank you for this invitation. I call it an invitation because it's placed a path to researcher students, to dig into this, and to some extent in the research area. There's plenty of research avenues that can be tackled in this field. Definitely, the open banking there's a lot about it. There's new concepts that still need to be demystified. We're talking about defying the central life finance. We're talking about the blockchain. It defies and lays ahead.

Thierry Harris: Defi or Decentralized finance is the evolution of open banking and the blockchain or the decentralized nature of the blockchain.

Decentralized finance is a network of applications which are run by smart contracts. Smart contracts are programming instructions built on a blockchain protocol.

Banks, which are centralized in nature, are still attempting to figure out how to position themselves relative to this technology.

If you have ideas you would like to share with the research community on this, please contact us at solutions@ie-knowledgehub.ca .

[music interlude]

Hamid Nach: The mobile, we need to know how to bring the bank into our mobiles. In the UK, for example, they're talking about challenges banks

Thierry Harris: According to UK data analytics company Beauhurst, challenger banks or neo-banks exist to disrupt incumbent firms - high street banks such as Lloyd's, Barclays, and HSBC. These challengers are fintechs intent on applying for a banking license, offering targeted services to increasingly niche markets.

[start end song]

Hamid Nach: There's a lot of things to do. This is an invitation. I do it to all the communities to dig into their research area. There are a lot of things that are interesting. There's a lot of avenues as well and conferences that we can share, and connect with peers, and make the world a better place.

Thierry Harris: "The economics of the future are somewhat different. You see, money doesn't exist in the 24th century". - Captain Jean-Luc Picard played by actor Sir Patrick Stewart from the movie Star Trek: First Contact.

But it isn't the 24th century, and for now, money is still very real.

Professor Nach left us with many clues for further research, from regulatory sandboxes, to Decentralized finance, blockchain and open banking. If you have further research on this field please don't hesitate to write us at solutions@ie hyphen knowledgehub.ca and we'll add links to our episode page to keep the conversation going.

Fintech's impact, colliding and merging with old world banking, AI and industry 4.0 promises to change the future of money.

The consequences of this change will affect our generation and future ones to come. Whether these are positive or negative is up to all of us to decide.

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Narrator: And now a final word from our sponsor, the IE-KnowledgeHub. IE-Knowledge Hub is a website dedicated to promoting learning and exchanges on international entrepreneurship.

If you are an education professional looking for course content, an academic researcher seeking research material, or someone interested in business innovation check out IE-Knowledge Hub.

Let's pickup where we left off for Nuvu Cameras, seeking a market application for their cutting edge camera technology.

Marie-Eve Ducharme: There is a 170 observatories around the world, so eventually you can saturate that market. So we decided to focus on the biomedical field. The big challenge in the commercialization when you invent a product for the astronomical field and you want to develop the commercialization for the biomedical field is majorly to, to do the bridge between those two worlds.

Narrator: We are back with Nuvu CEO Marie Eve Ducharme. Ducharme discusses the challenges of commercializing a highly specialized product for two very different markets.

Marie-Eve Ducharme: First of all the camera was invented for astronomical applications. and for sure data from stars didn't convince the bio-medical researchers. so it was kind of a challenge to get their attention. Olivier and I are two young

entrepreneurs, it's not necessarily easy to secure potential customers to buy your camera. In the biomedical field they want a proven technology because when they use your camera, it needs to work right away.

Narrator: By finding medical researchers willing to work with the camera's technology, Nuvu was able to pierce the biomedical field. They worked with researchers at the Polytechnique Montreal to get their camera installed in systems which surgeons were using to conduct brain surgeries. they were on the right path.

Marie-Eve Ducharme : The people that are using our technology, they are the ambassadors to advertise actually our products. Because even if you have the best camera in the world, finding the early adopters or your technology is a big challenge.

Narrator: You've been listening to segments of the [Nuvu Cameras case study](#), available on ie-Knowledgehub. To learn more about Nuvu's journey, watch their full case for free at [ie hyphen knowledge hub dot ca](http://ie-hyphen-knowledge-hub.ca).

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