



For Cloud Professionals, part of the On Cloud Podcast

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Title: How Freddie Mac created a winning formula for cloud success

Description: Every organization's cloud journey is unique, and there are always unexpected potholes and detours along the way. However, with capable leadership the journey can be successfully navigated to a positive destination. In this episode, David Linthicum and Freddie Mac CIO Frank Nazzaro discuss Freddie Mac's cloud journey, including why they started, lessons they learned along the way, and what organizations need to achieve a successful cloud migration. According to Frank, it's good leadership with a solid support structure, modern-delivery methods, and a successful partnership between IT and the business.

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Operator:

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David Linthicum:

Welcome back to the On Cloud podcast, your one place to find out how to make cloud computing work for your enterprise. This is an objective discussion with industry thought leaders who provide their own unique perspective around the pragmatic use of cloud-based technology. Today, man, we are in for a treat. We have Frank Nazzaro. He's the Executive Vice President and Chief Information Officer of Freddie Mac. He leads the information technology division and provides corporate-wide leadership for the company's technology strategy. Frank, welcome to the show, and also thank you for the listeners on behalf

of Deloitte and everybody else who has something to do with this podcast. Appreciate you coming on and giving us your thoughts. So, tell us what you do. What's a typical day in the life of Frank?

Frank Nazzaro:

First let me thank you, David, for inviting me to share the experiences here at Freddie Mac over the last few years. Day in the life, well, that's varied since I've started. We've had a couple of leadership changes recently, so what my day looks like today is very different than when I started. But today we're spending a lot of time around what we refer to as our IT Up Model Version 3.0, and we're looking to accelerate our business-aligned IT venture. So, it's all-consuming, as you would expect anytime you're doing any kind of planning where you're evolving transformation.

David Linthicum:

Yeah, and it's important, too. I always stress with my clients that planning, although not a very fun activity in many instances, is probably the most important activity you can do, whether it's architecture, dealing with Op models, dealing with technical selections, things like that. You're thinking through what you're going to do before you do it. That has the ability to kind of avoid some mistakes moving forward. Has that been your experience?

Frank Nazzaro:

Absolutely. Our approach, although you kind of highlighted something around the organizational stuff might not be as fun as, let's say the software and technical design, but I approach the organization in the same manner that I approach the technology, and I view it as a science, and it is. There's an entire practice, I think, that Deloitte has behind these concepts, especially around operating models. So, if you look at it that way, it can be just as fun, and you have to design it like a machine, and you have to make sure that you put all of the mechanisms in place for the proper care and feeding to make sure that you obtain the goals you originally set out to do.

David Linthicum:

Yeah, the big approach that I've been on, or topic I've been on, for the last couple years is the fact that we need to get to an optimized architecture, so it's not good enough that it just works. If it works and costs us ten times the money of something that is optimized, or if it works and it's ten times slower than something that is optimized, we don't know any better. And that's not necessarily the answer. Ultimately, you're trying to get to this optimized architecture. Are we asking the right questions, assembling the right things, doing the right testing to make sure that you have a solution that's as close to 100 percent efficiency as you can get?

Frank Nazzaro:

To that point, if you have the right frame of mind when you enter into your—in any program, for that matter, if you fall in love with your design, you might not ask those questions about whether or not is this optimal, so you constantly have to be pressure testing that design and willing to evolve, and you can't do that unless obviously you have the right KPIs, OKRs, et cetera, in place in order to make that determination. But I guess the point there is don't fall in love with your design. Go into it with a little skepticism and a continuous improvement mindset, and most likely you'll ultimately end up with an optimal solution. That's the hard part. A lot of people don't have that mindset.

David Linthicum:

Yeah, I think they don't. They don't. I have those discussions pretty much on a weekly basis. I don't fall in love with my design nor my designer, no matter if it's a client or a colleague. At the end of the day, I'm going to question what they need. I may like them a ton. They have to be able to kind of run the gauntlet and answer some very tough questions because, at the end of the day, we're building a business around this infrastructure. This is what's going to run the business moving forward, and also the ability to kind of take the business to the next level and make the business successful. So, if you don't have something that's optimized, you're wasting money.

That's money that you could use to reinvest in the company, reinvest in IT, reinvest in new products and services, and all these sorts of things, and people kind of have to realize that, that the days of inefficiency are kind of behind us and technology is kind of the force multiplier to take business to the next level. So, speaking of that, you have been busy with the whole cloud computing stuff, so when did you determine that cloud computing was strategic for Freddie Mac?

Frank Nazzaro:

Well, part of why I was hired was to aid in the transformation to the cloud, so I'd love to take credit for all of that, but that's not the case. What I did do is really put our footprint on the path to the cloud. So, our starting point, and part of your productivity discussion that you're leading in with, is where are you starting from, because if you're already a fairly optimal, scale-based organization, it's very difficult to squeeze the grape further, even if you go into cloud computing. But we had some very specific requirements, especially around business resilience, and our current solution was less than optimal, so we went down two paths. The first one was how do we improve the resilience and robustness of our underlying infrastructure? And then there we partnered with Amazon and VMware for our legacy infrastructure. So, the key was speed to market for us there. The second thing that it bought us was a little time in order to build out our cloud-native solution so that we had a target platform for the refactoring of our applications.

So, we took a two-pronged approach. It was clearly business-driven for very specific reasons. We did have time constraints. In fact, we're still in—we're toward the tail-end of that journey around testing all of our resilience and automation, but the key there is it did buy us time to do this ultimate landing zone of what we refer to as gold field, which is our cloud-native implementation. And roughly right now, we're about 85/20 or 15 split between cloud-native and this VMC or VMware implementation on Amazon.

David Linthicum:

So, tell me about your journey there. What was it like? What were some of the pitfalls? What were some of the challenges? What were some of the opportunities that you saw?

Frank Nazzaro:

I'll talk about each of them independent because they were two very different sets of challenges. In the case of VMware on Amazon, we were actually at the bleeding edge. They were working out the kinks around the interfaces to your traditional VMware-type of infrastructure and making sure that it was integrated with all of the Amazonian-type of technologies, primarily networking and storage. And then we obviously put VMware and, I'm sorry, our

security overlay on top of that. Getting all of those things to work and stay and be able to migrate in the timeframes, that was really difficult. So, if it wasn't for the partnership that we had, and in fact, you guys were along for the journey with me, between VMware, Amazon, and Deloitte, we would have never made it.

It was literally like the Gumby model. If you ever remember, the train that would go down the tracks and the tracks would appear just ahead of the train, well, VMware was fixing any of the issues, especially around networking and scale, so it was really, really difficult to make sure that this fragile infrastructure would work in this new, virtual environment. But again, the partnership was key there. It would have never happened without everyone really, really being behind it, including the firm. The business was there as well, and they took a lot of pain. We did run into, once we really started scaling this thing up, we did run into some stability-related issues. I already touched on some of the fragility that was in the previous architecture, so we had to work through all of that. Again, it was an excellent effort, but it didn't come without some pain.

As far as cloud-native, the thing you really wrestle with there, you have to be careful is trying to design for every possible solution. You have to balance that with the just-in-time nature, the minimum viable product that the developers need in order to deliver their business features and functions. So, balancing that time and that roadmap and the backlog really becomes challenging, and as you start to scale up, that backlog starts to build and you start to then break a lot of the agile, what we refer to as modern delivery. You start making tradeoffs within your modern delivery, and next thing you know, you're starting to end up with the same thing you previously had. So, I really caution everyone with I love the concept of agile. We eat, sleep, and drink modern delivery, which is a much broader program, but you better have matched impedance and a really good transition management office when you are building the foundational components while the developers are trying to consume it.

David Linthicum:

So, if I put you in a time machine, sent you back to the beginning of your journey at Freddie Mac, what would you tell yourself to do differently? I always love that question.

Frank Nazzaro:

Okay, first thing is I'd slow my roll. There's no doubt. We have been moving very, very fast, and sometimes you can use that to your advantage. You just have to be careful because sometimes you can take on a little bit too much risk, and it's not technical risk because we knew that we would get over all these technical hurdles. It's whether the culture of the firm has that same appetite that you do. So, you have to be really careful with that, and we started to push—I think we pushed a little too much. I would redo that. I'd rethink that. So, that would be number one.

Second—the second item is looking at the way we did adoption. That was a mixed bag. In some cases, we did a really good job around giving choice and flexibility to the business, and I encourage that whenever possible. And other times, we drove. By giving the business choice, that would be my optimal route moving forward. In fact, I'm going to try and move that way with everything we do. This way, they can balance cost and risk and their timeline, and it gives them time to digest and work it into their own backlogs. That has been very successful. When we are driving centrally and imposing things, you're at the mercy of the developer community, you're at the mercy of your project leads and whatnot, and if they're not doing a good job in communicating and giving enough lead time, that just engineers conflict into the organization, and that never works out. Then that becomes a reflection on you as a leader, and you can't be everywhere, so that's something that I would definitely change.

David Linthicum:

So, moving forward, we talked a bit about agile and the ability to kind of leverage agile effectively, and of course that links with DevOps, DevSecOps, and the ability to kind of automate agile moving forward. And you hit something I thought was very profound. There is a tradeoff when you're trying to leverage very modern and agile and fast-moving development techniques and kind of ensuring that all these things are able to sync together and kind of work with all the dependencies in mind. I'll give you an example. So, in other words, you're building these systems. Need a database that's there in time for the developers to leverage it to build the system to find the testers to find all these other things that are really dependent, one to another, and the way I used to tell my people in the past, and I've been a CTO a ton of times, if you get into an electronic drum circle, you have to have some sort of an orchestration to make sure these things kind of come together in time. What are your thoughts on that?

Frank Nazzaro:

Absolutely. So, let me just touch on something that you brought up first around the businesses having some features and functions that they need, and you might not necessarily be ready. So, we try to create—within our modern-delivery landscape, we looked at a variety of different use cases and tried to design a process around it. So, in this particular case, one of the tension areas is what we refer to as the first-mover model. Someone shows up with a requirement that we don't have the capability available yet. What we were trying to do is, how do we all do this without blowing the place up or providing the right guardrails.

So, we will allow that first-mover to introduce the technology and bring in a minimum viable product, and then we create an industrialization process so that we take it off their hands if it's something that we think should be core and built into the foundational components. That had mixed results because a lot of the businesses—some adopted it and loved it and were very successful. And in the industrialization phase, we had no problem. It gave us time to fund it properly, build a team around it, and do a proper transition. In other areas, others would be a little more resistant. They wanted to have something a little more black and white or binary. “Hey, do you have it? If you don't, then let me just use the old stuff,” which ended up introducing other issues. So, we tried to look at all the different use cases and variants that we ran into, and instead of fighting it and saying no, how do you industrialize it in a way and make it part of our methodology and culture. That's still a work in progress. What was—I'm sorry, the second part of your question?

David Linthicum:

The second part was how do you orchestrate these things and make all these dependencies come together so that you are running an efficient operation?

Frank Nazzaro:

Yeah, so first-mover should help with that. That was the general idea because then you remove the conflict, and if the business needs it, they should develop it, they can fund it, we would take it over, et cetera. The second is just the modern-delivery program took into account not just agile practices, but the interoperability between these different what we refer to as products. So, how do you make sure that the requirements being—or the NFRs being driven out of one area becomes the backlog of another? And we set up a whole series of coaches, release train engineers, et cetera, within at least our first

crack at this was scrum-based under SAFE and tried to make sure that we had matched impedance between all of these different moving parts. So, that works, by and large, up to a point.

We kept testing that model over and over again, and then we started to evolve the roles within our modern-delivery methodology, so we realized then we needed some type of air traffic controller, like a chief product owner that can arbitrate between different products and do the prioritization. You know as well as I, everyone thinks that their requirements are the most important in the world, and if they don't get them, the world will come to an end. So, that actually evolved very nicely, and we were able to scale that up quickly and rapidly, and although we started this process, the business soon took it over once they realized the benefits. So, I would say modern delivery and the entire methodology has been probably our greatest success. The underlying cloud infrastructure to support it has been foundational and necessary, but, by and large, the tip of our strategy, at least IT for IT, has been modern delivery.

David Linthicum:

So, one of the things that were my challenges when I held leadership positions in companies, including the position I have now, is you're looking to promote a culture that's both open, honest, and also agile in nature, and the ability to have everybody kind of self-motivated, being proactive, those sorts of things. What's your advice to any leader who wants to promote that?

Frank Nazzaro:

So, everything you listed is good on paper, but it's like the number one challenge. And if you look at anything that we have written, or our modern-delivery series that we put out on LinkedIn, a lot of it has to do with the culture and how do we change that. That doesn't happen overnight, and I don't think our first attempt at it worked very well. Simple things like getting the team to provide feedback amongst themselves, people aren't comfortable with that. We're starting to deal with human nature, and I'm no psychologist, so please take everything I say with a grain of salt. But, again, it is very difficult. So, we took a more structural approach of how do we provide a support structure and then all of the necessary OKRs to try and drive certain types of behaviors, hoping that that would just evolve into a Freddie culture. But I'd say, by and large, we're doing it through the coaching mechanism. In fact, I believe as a CIO that eventually my role is going to move more toward coaching and leadership than driving projects. Does that make sense, David?

David Linthicum:

Yeah, it does make sense. You seem very hands-on as a CIO. Do you think the role is going to evolve moving forward where you're less hands-on and you're more into coaching and more into setting up another layer of leadership below you?

Frank Nazzaro:

I don't know about layer of leadership. In fact, that is what modern delivery is trying to do away with. So, yeah, I'm moving more into a coach. In fact, if you look at the way I manage today, in some cases, I'm very hands-on, and in others I'm not. I just don't need to be. If you look at, let's say, my platform team that's driving the cloud-native, and I've worked with this individual before, we kind of divide up—we get together and we say, "Hey, what do you want to do? You take this side, I'll take this." We split the work.

We basically split the work. He's good at things, I'm better at others, and we really don't need to interact, and our methods there are a little more informal. Whereas when I'm looking at things like some of our remediation programs, I'm full hands-on because of the sensitivity and its current state of maturity. So, I personally don't want to be in that level of detail. I would much rather focus on the evolution of things and what's the next step. Like I mentioned IT Version 3.0, and trying to work with all the people and individuals to make sure they understand what we're doing and why we're doing it and trying to help them and direct them and get their mind in the right—point it in the right direction. Does that make sense?

David Linthicum:

It does make sense. So, we talked early about optimization. In essence, it's the optimization of you to access the things, and if it ain't broke, don't fix it and the ability to kind of focus on things that need your attention. Is that a good way to sum it up?

Frank Nazzaro:

Yeah. It's hard to have—I think in this day and age to have one leadership style. How can you do that? There are too many variations and patterns and things that are going on in the world, and some things are light touch, and some things, you really have to be in it to win it. So, yeah, I agree. I agree with the way you summarized it.

David Linthicum:

Yeah, it's funny how leadership skills certainly evolve over time. Mine have. The biggest mistake I made is I took a management class when I was in college and I tried to apply that when I became a manager, and I was absolutely doing the wrong stuff. People want to be treated as equals, they want to be treated as a peer, they want to be treated fairly, and they want to be motivated. And, by the way, money typically isn't a motivator. The ability to work on interesting stuff, build net-new things, the ability to get excited about your work every day, that kind of came to me as to why everybody goes to work and how I can leverage their talents to optimize whatever I'm doing.

Frank Nazzaro:

If you can get all of that out of your career and get paid, that's always nice.

David Linthicum:

It is always nice.

Frank Nazzaro:

Yeah, but I agree with everything you said. There's some really, really good material out there, and I tend to try and read a wide scope and breadth of different types of leadership material.

David Linthicum:

I remember a very profound time in my life when I was a 20-something executive working as a CTO, and my CEO gave me some great advice. He said, "Be the leader you want to have." He used to tell me that every time I left his office, and I was like, "That's absolutely the way to think of it." So, last question but also very important, what advice would you have for other CIOs that are basically on the same journey right now or in the future?

Frank Nazzaro:

Okay, so you're going to need an unbelievable support structure, and when I say support structure, it's the folks that are around you. I don't necessarily mean you need to have like minds. They just need to be really smart and very thoughtful. You need to be able to think ahead, so that's going to be a combination of your key lieutenants, some advisory services. You're definitely going to have to make sure that you lay pipe with all of your peers, so that they understand what to expect and really acknowledge that. I think that was a weak link in my implementation as well. I failed to mention that earlier. I don't necessarily know everyone knows and understands, if they're not in a technology environment, what they're signing up for.

Third item would be patience. This doesn't happen overnight. The business and the board and the senior leaders of the team, they hear cloud, they think things are going to be instantaneous, but this is a long row to hoe, and we're on this now three years, let's say implementation-wise about two, and you really need to have a thick skin, and you need to remind people of that journey and what the process is. And then last but not least, in combination with your roadmaps, you're going to have to have all of your metrics, because people are going to want to see progress, and they won't necessarily understand bullet items.

They actually need something a little more quantitative in nature, whether it be when you're presenting risk, or you're presenting dollars, or you're presenting productivity and capability. They're going to need something tangible that they can understand, and that is, I think, another area where we were a little weak. We're improving all of that now, but an organization like us, we're risk focused, so if you're in financial services, you better have a risk mindset. In other areas, if you're doing consumer and whatnot, I think those metrics and KPIs would be very different.

David Linthicum:

Wow. I mean, I appreciate you being so candid with us and giving some great advice on some other folks who are out there making the same journey and can learn from your success and can avoid mistakes and basically become a better practice at it.

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