Guy Iannuzzi

Interview conducted by

David Caruso, PhD

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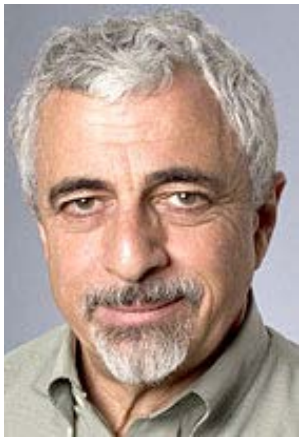
Guy Iannuzzi



Guy Iannuzzi is a marketing executive with over 40 years of diversified experience in marketing, proficient in translating technologies into commercial success. Guy founded the agency Mentus in 1981, specializing in marketing and public relations for high technology and life science industries, including the DOD, DOE, NIH, the NSF and hundreds of corporations.

Versed in marketing and finance issues in a wide range of local and government agencies and industries (including aerospace, electronics, information technology, biotechnology and biomedicine), Guy has an unusual ability to communicate the value of esoteric science and has been asked to promote the San Diego transformation as a high technology cluster around the world, from Bogota to St. Petersburg to Saskatoon.

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THE SAN DIEGO TECHNOLOGY ARCHIVE

INTERVIEWEE: **Guy Iannuzzi**

INTERVIEWER: **David Caruso, PhD**

DATE: **March 27, 2014**

LOCATION: **La Jolla, CA**

CARUSO: Today is the 27th of March, 2014. I'm here with Guy Iannuzzi.

IANNUZZI: Yeah, Iannuzzi.

CARUSO: I wasn't sure if you -

IANNUZZI: Well, it's Iannuzzi or Iannuzzi. If you're Italian, it's Iannuzzi [Pronounces it E-annuzzi], if you're English, it's Iannuzzi. [Pronounces it I-annuzzi]

CARUSO: Yeah, people always wonder if I actually pronounce my name Caruso with sort of a Z instead of an S, but I always learned it as an S growing up. So yes, the 27th of March, 2014, this is an interview for the San Diego Technology Archives Oral History Project. We are here in San Diego, and as I mentioned, thank you very much for agreeing to participate. What I'd like to do is start off with some general questions to get some more information about your background. So what I'd like to start with is just hear a little bit about where you grew up generally, where you went to school, if you went to college where did you go, and things along those lines.

IANNUZZI: Well, I've had a relatively checkered history. I was born and bred in Italy in a mountain village 40, 50 kilometers outside of Naples. Poor white trash without a trailer is what my parents like to say. I came when I was nearly seven to New York. My father went to join relatives in America for a new life. A Genuine immigrant story. We actually are the prototypical poster children, coming to America as immigrants and getting a good education in Connecticut, living in Naugatuck, Connecticut the first 15 years. I left when I was 19. From Naugatuck, ironically, where Naugahyde came from, and the famous Naugas from UniRoyal.

And I went to school at University of Arizona to study astrophysics. So I'm a failed rocket scientist actually genuinely, and spent the early part of my career in Tucson, Arizona. I did not end up working in that field. I ended up working both in psychology, in medicine a little bit, but also ended up working in advertising and design. I was paying my way through school. When I switched majors, I lost my scholarship, and as a result, I had to pay my way through school, and discovered that I actually had a fair talent in art, and started doing freelance advertising in college for a variety of department stores.

Within a year, I discovered I was making more money working ten hours a week than my professors. So when I graduated and then went for some post-graduate work – my first wife made clear to me I was going to make way more money working in advertising and design than I was in the sciences, and I never looked back. I moved from Arizona to San Diego in 1971, became an art director for what was then the second largest advertising agency in town, which became a – I forgot the name – Teawell and Associates.

And I liked the area, and liked the specialty – because of my science background, I gravitated toward accounts and work like TeledyneRyan, and had to have an aerospace kind of fix. I didn't have a lot of such work in San Diego. I went to LA and started working for a range of companies, Hughes Networks. I mean for – I'm sorry, for Hughes, for Getty Oil Corporation, for Northrop, and Lockheed as a designer, as a writer … a variety of things. And what happened is after I got tired of the rat race in LA – and genuinely, the traffic drove me crazy, moved back to San Diego in 1980 looking to do something in the marketing side for a technology type of company.

San Diego at that time was seen as one of the top hubs of aerospace. You had General Dynamics here, Aerojet General and a variety of other companies. They became my first accounts. Literally, I became one of their agencies within the first year I was here, so at a certain level, I was started off fairly successfully. Relevant to our conversation about technology and biotechnology in San Diego, my first account was Aerojet General. My second account was M/A-COM Linkabit, a company owned by a propeller head named Irwin Jacobs and Andrew Viterbi, which led to the genesis of Qualcomm down the road. And it was all due to the sheer luck of being here at the right place.

While I was working for Aerojet General doing their corporate presentations for Wall Street, I also came across a little company called Hybritech as a Kleiner Perkins Caulfield and Byers Investment. And while I knew a little bit about the venture capital business, I knew nothing whatsoever about biotechnology, not even knew what the term meant. You know, I was a rocket scientist, astrophysicist, astronomer. I knew how to market aerospace and the hard sciences on that side. So when I had the opportunity I was able to talk to the early people involved with Hybritech, and they were Ivor Royston and Ted Green and Cole Owen, – another person who became VP of marketing for Hybritech and sort of took me under his wing.

The entire team took me under their wing, and I learned everything I learned at the beginning about biotechnology from Ted, and ultimately David Hale who came on board later on. And I became involved in almost all their projects, everything from the earliest launch research projects to their first diagnostic assays from a variety of areas that the company worked in and ultimately with PSA down the road. And it taught me about entrepreneurial companies because you have to understand my first high technology companies were large companies.

They were like, as I said, Aerojet and GD. So I learned everything about entrepreneurship in emerging companies and technology companies from Hybritech and what came out of Hybritech, and I was kind of dumb and happy. I knew nothing other than what I saw. So that's what I thought all companies were like. I thought all companies had a Friday where everybody got drunk together as a team. I felt at all companies you could walk into the chairman's office and just level about what was going on and whatever.

You could have this kind of open door, this kind of energy and this kind of spirit. Little I knew that that's not very common, but it was magical because what happened is that I saw this kind of entrepreneurial mindset. The interesting thing what became clear to me later is you had about 12 CXOs, I mean 12 VPs in the company at Hybritech. Every single one of them later created one to 14 different companies. So the genesis of the cluster, the biotechnology cluster in San Diego really did come from that company. Because I remember in 1983, a cocktail party where Gen-Probe was founded. You know, by Tom Adams and by Howard Birndorf and by Gary.

So the reality – and I remember them talking about we're going to create this company on the Gene Probe side. "Do you know what Gene Probes are?" I said, "No,

not really." So they explained to me it's kind of while we're drinking like crazy. And they say, "And you're going to be our agency." "What do I need to do?" Because I hadn't really started from scratch for the company because when I joined Hybritech in terms of being one of their agencies, they were already ongoing. The company already had gone public, and I was writing their presentations for Ted Green and doing some of their FDA presentations for them, doing slide presentations, packaging for the company.

We actually did a secondary offering, and I actually put together the red herring for the company at that side. So what was wonderful for Gen-Probe, I actually got to see how you create a company from scratch. And we worked on with the branding of the company and how the company's first presentations would be like to get venture money, and then to Series A, and I learned about the Series B and mezzanine rounds, and then the company going public. So we actually got involved. That was my learning about what a company needed to do to get supported along that side.

CARUSO: Can I just stop you for one second? One thing I want to ask about, so that way – I mean just based on how you're talking about things right now, it does sound that the way those companies were approaching branding themselves was different from some of the things you had been involved in previously.

IANNUZZI: Absolutely.

CARUSO: And so I just want to get sort of a snapshot of what things were like for the other companies you were working for just as a comparative to talk about.

IANNUZZI: As a comparison, my background had been in Los Angeles working for some fairly large agencies and extremely large companies. I mean frankly, working with Getty Oil Corporation, for example, and Hughes Corporation. Usually, you're part of a multiple group of agencies. You had a branding challenge or an assignment with large budgets, usually working with people who had tremendous background. I know we tended to work for a marketing director or in a smaller company the marketing vice president.

And as a result of that, you tended to have a long vision. You tended to have a lot of knowledge. You tended to work as a specialist, and what was very different – and this became true when I worked with Aerojet General in San Diego. What became interesting about these biotechnology small companies, and I have to tell you, when I

first met Hybritech, they were in a trailer. They were literally in a trailer in the parking lot of what became Burnham Institute. At that time, it was the Fishman's La Jolla Cancer Research Foundation. Another client that became mine down the road.

And they were nobody. They were a small trailer where they had steel case desks that had a cardboard thing they built on top of the desks so four people could use the same desk. The most incredible thing I've ever seen in my life. And I'll be candid. I didn't take them that seriously. I thought, "This is kind of really crazy." I just got persuaded that this would be an interesting thing to work with. And I got to love the people. These were brilliant. These people were amazing. But everything was sort of the seat of the pants. It's like we need to do a product. You know, we – no. Some of the people there had marketing background. Cole Owen, for example, had come from New Jersey, had worked where everybody had worked for larger companies like Baxter or Ortho or whatever, and so he knew what he needed to have done, but one, didn't have money, number two, had to be done sort of by the seat of your pants.

"So Guy, we need to do a package for LSH, this particular product. It's an assay for – it's – "What's an assay? An assay is a test, a diagnostic test." "Oh, okay. And what audience? It's going to go to hospital laboratories that do this, this, and that. Okay. So let's look at what the competition is doing." So it was done in one level very simply, but what was kind of wonderful about it is it was roughly direct – we tended to get things done very quickly. Would take like three or four months for a larger client because you had the approval cycles of large committees or whatever. Here, there were only two people. Me and the other person, and every once in a while, they'd grab Ted, and Ted would come into the room and say, "Oh, yeah, I like that," and walk away.

What made it special is that we would do it in – I thought about that – in three or four hours, what would take a week for somebody else, and not that the work was harder or easier, it's just simpler, straightforward. People would make the quick decision. They became very autonomous in terms of when they knew what was the right thing, they didn't feel like they had to persuade somebody. They just did it. The team that they had at Hybritech, which was relatively unique, and I didn't know how unique until later, although some of the earlier companies that came out of Hybritech had a lot of that same thing, was a level of trust that I never understood at the time because I just took it for granted. Later, that became unique.

It was part of the ethos that made San Diego a remarkable hub because what ended up happening is these people who completely learned to trust each other –" and you know, Cole knows about marketing, so let's have Cole make that decision." So you didn't have people jump on Cole because, "I know better." No, he's in manufacturing and he's in research. So the research people did not step over the manufacturing, even though they talked together very directly. People tended to let people run with their genuine personal expertise because they trusted them. Look, we went drinking together, so we learned what each other was about. We learned about each other's families.

This level of intimacy engendered a level of trust that became a very useful tool for being cost effective and quick in cutting to the chase, which allowed the company to do a lot very quickly with very little resources. And that was amazing because I never appreciated that this level of efficiency would be such a powerful tool to develop. But what happened is when the company later on was acquired by Eli-Lilly with an entirely different culture (which was the old culture I knew elsewhere) Lilly came here and squashed the bejeezus out of all this.

These people couldn't stay – they just literally within a year, almost every one of them left the company. And this is interesting because Eli-Lilly asked me to work on a couple campaigns with them, and we failed. Failed. We couldn't deliver the way they wanted us to deliver because everything had to be so buttoned up and made for multiple committees. "And so this is what the approach should be. No, you need to show us six different approaches so we can have three committees make a decision on which one, even though they're stupid. Do them anyway."

And so what became clear to me is that it was horrifically inefficient. Now I knew why it used to cost us maybe $3,000.00 or $4,000.00 then would actually cost $100,000.00 for the same activities. And it would take five times as long. And it was very depressing, very dispiriting for that, and that's one of the reasons why a lot of the people that were at Hybritech just went and created other companies.

CARUSO: One thing that I'm kind of curious about is when I think about large companies and brand reputation, right, it's something that they've built up over years. And so in some ways, there's an inherent trust automatically built into -

IANNUZZI: On the customer side.

CARUSO: Right, that the people are going to potentially be buying. Was – how was that type of culture the large corporations that kind of already had this reputation? How is marketing for them different from what these startups are doing? Because they were unknowns.

IANNUZZI: Totally unknown. That's a very good point. When I and people like me would work for a larger company, we tend to have a legacy. We call it a brand legacy where the audience that we're marketing to already knows you from – because you have these other five products. For example, Baxter and Abbott were competitors for Hybritech. I'll use Hybritech as an example. And so they went against Hybritech and tried to sell to the hospital markets and some of the laboratory markets. The challenge is they knew Abbott. They knew Baxter – they knew these other companies. They didn't know who the heck we were, so we had to basically go on the fact that we're entrepreneurial, but we're unique. We had something that wasn't there already, something for a test that didn't exist yet, or was twice as fast as something else.

So it took a lot of salesmanship. Hybritech worked very hard in – they worked with distributors, CMS. I remember at the time several distributors, and we had to do the presentations for our client for – I think Hybritech to their distributor to motivate the distributor's sales organization to sell hard because they had to sell against more established brands that the customers had trust in. Who are these little upstarts? Who the heck is this little company? No. There was something that we did kind of use, and I guess this is a Silicon Valley, quote, California thing. There is this kind of mindset that then was starting to happen.

Don't forget, this is the same time that Amgen was founded, Cetus was founded. The biotechnology thing – and as soon as I learned what it was all about, I realized, "Wow, this has been happening right now." It was just starting. And there was this kind of buzz in the medical community about these new technologies. Monoclonal antibodies. You know, anti-sense technologies, gene probes were starting to come out into diagnostics.

There was a sense that that industry was dramatically changing on an almost revolutionary level based on new technologies that were coming from little companies on the west coast that were unique and amazing. There were articles in Time Magazine and there were articles in Forbes. I mean there were articles all over the place about this, and we – I started to read this, and I realized, "Oh my God, this

is really interesting. I'm into something neat here." I didn't know because I was in it, but I didn't know.

Then I realized, and that was something we would play off of to the extent that – you want to see something really cutting edge? You've got to go to a small company. Like this became true of the software industry later because Oracle and the new stuff didn't come from Oracle, and it didn't come from IBM. It came from little companies that would do this kind of ground-breaking cutting edge stuff. So that was something that was played in. I mean we had other companies, like M/A-COM Linkabit. Linkabit did the same thing with a different technology. Ironically, I understood that, and the other technologies – because I was right at home in that area because we got involved with CDMA and TDMA when that big thing happened in the '80s, and I had to take a side.

So while I'm talking about the biotech side, there were similar kinds of things happening in the telecommunications and software side. Analogous. I'll say analogous to that and not exactly the same. The players were totally different, but there was very much that same entrepreneurial spirit, although never quite the exact spirit that we saw in the biotech site.

CARUSO: One thing I'm also curious about is there are a lot of these startups in the area, and I know why you came back to San Diego. Did those startups ever express what brought them here?

IANNUZZI: That's interesting. You have to appreciate that in the '70s – now this is kind of interesting for me because I originally came here in '71 from Tucson. Stayed here two years and actually left to go to LA because I wasn't making enough money. I was senior art director for the second largest agency, and I was making $700.00 a month. And I got my first big raise, which is $25.00 a month, and I was so – they were really happy with me – I was so shocked and disappointed that it was so small that I went to LA, and I doubled my salary literally within six months.

So I went away because of that. And at that time, I came here only because this was by the ocean, away from the desert. That's all. But when I was in LA, I learned about technology, a little bit more about aerospace. Anyway, not about biotech. And I realized that San Diego had some aerospace stuff here, some major aerospace companies. We were a nexus of aerospace technology, just the way we were ten years earlier in the finance industry. You may be familiar with – at one time, San Diego was

one of the top finance capitals of – in America until these huge scandals came in here. But the three top – there was three very big aerospace companies based in San Diego, and I learned that in LA.

So when I got sick and tired of LA and I wanted – and I was already embedded in the aerospace industry, it was logical. I wanted to go back to sweet San Diego that I really liked, and I want to be a high technology agency in aerospace. So I came here, and I frankly succeeded. I mean within the first year, I had the three major accounts in the city, or I had a piece of them anyway.

What I did not know is that other little nexuses were happening, and this is the stuff that I learned very quickly. First of all, there already was a technology center in terms of aerospace. There was – now unbeknownst to me, but I learned that later, you had the Salk Institute in the '60s. You had Scripps. You had a variety of research institutions start, and the big deal was UCSD. Roger Revelle getting the UC regions to commit to their next campus in San Diego. And all based on the Scripps Institution of Oceanography, to be candid. That's where it all kind of came out of.

But all of a sudden, there was kind of a research kind of hub in here that kind of unbeknownst to anybody else was started growing in there. So on the biotech side, people were paying attention somewhat that this is a research hub on that end. So what ended up happening is that there were some people starting to sort of come in. Not in a big way, but some of the venture people were waking up to this. I mean Kleiner Perkins was one because ironically – you know the story about Ivor. I don't have to tell you how Hybritech was created. But there was a bunch of other things. There was IVAC, and it's a medical device industry that had been here, which I knew about before but I had never taken seriously.

IVAC was the largest ventilator company in the world, **a**nd the second largest, which was a spinout of IVAC which ten years earlier became the two biggest competitors, IMED, was also in San Diego. And there were a lot of ancillary little businesses which were scattered. There was a software business here, and ironically in the software graphics business, a major player. Peter Preuss is the person who was the CEO of ISSCO, you know, I-S-S-C-O, which he ultimately sold to Computer Graphics. Computer Associates, I'm sorry. We were their agency. I mean I had the stupid luck of being involved with every one of these sectors in the first year I was here.

And the work we did for them was not a very big deal. It was very straightforward, and whatever, but I got to know Peter along the way that same year, 1981. So it became clear to me that there was little hot beds of different technologies that were starting to move a little bit. Now Hybritech and the biotech was the one that had became I want to say self-aware the quickest. I mean the irony is that the other ones were kind of more quietly in the side because we were dominated by the aerospace industry. It was still the king, 50,000 employees. It was the gorilla that ran the, quote, technology, and I have to say something about aerospace.

It doesn't play well with others as well as other industries. I don't know, you may know that already. Unlike the software business that tends to work with the hardware business as well, and it tends to go in other verticals like biotech, and it tends to – because there's other things need software. You need software to run, and devices – you need software diagnostics. You need the finance businesses. So software businesses learned to partner, and they've learned how to work with other companies. Aerospace tends to work with the government. The government is their major client.

It tends – a lot of it is secret. A lot of it is classified, which I've had secret clearances in the past when I worked in the industry. It tends to be very suspicious and very insular in a funny kind of way, and I'll – also, I'll be very candid, very arrogant, very dumb – hey, we're rocket – part of me thought, "We're rocket scientists. You're not as good as we are." And it's so hilarious. So the fact that it was here, it was not the reason the other technologies came here. You'd think so, but it was not.

So this is interesting, though. When we won the cold war, you know, Reagan and everybody in the country wanted that – and by the end of the '80s, all the sudden, the spending – government spending disappeared essentially for all intents and purposes. It collapsed. We lost it all. I mean what ended up happening is that Aerojet General moved back to Bakersfield. GD moved to St. Louis, Missouri. We were gone. We were eviscerated. I mean the business literally went in three years, and it was a huge thing for the city in terms of how to deal with that. Well in that ten year period while that had happened, sort of unbeknownst to everybody, the biotechnology business went from one, two, three companies to 150 companies.

I actually had tracked all this because I actually have – as a presentation would show, I did it for the EDC and for BIOCOM and for CONNECT, showing how in a five-year

period, three companies became 50, became 150, became – and I have multiple slides that show – I'm capable of seeing these because it's really amazing how large this came. What I did is I also ran the same thing with the software business, with the telecommunications business. The software business was more invisible, although there was a society in San Diego that was the San Diego Software Council. I'm screwing that up, I think.

It was here, but it didn't have a high profile. Telecommunications developed a much bigger profile. Irwin Jacobs is one of the reasons. You know, M/A-COM Linkabit became – Linkabit became M/A-COM Linkabit, then Qualcomm. Then from that, when it was sold, General Instruments bought part of it. Hughes bought what became Hughes Network Systems, one of my clients for ten years. And that ran the two major cell phone standards in the world, TDMA and CDMA, all in San Diego, which is like kind of scary.

And ultimately, CDMA won out, and that's Qualcomm, and led to the giant we've got here today. But a lot of other ancillary things in telecom came here. There was arguably in that 30-year period we've been here, San Diego has several times been the telecommunications capital of the world. Several times, we've had that from the number of companies, the amounts of transactions, the amount of business on that side, which is saying a lot if you consider we only have one Fortune 500 company of that kind, which is Qualcomm here on that end.

But we know – I noticed that, and it's something that has been kind of extraordinary.

CARUSO: So one follow up question is where are – one of the things that's regularly discussed is how especially in the computer industry right now, everyone is stealing each other's employees.

IANNUZZI: Totally.

CARUSO: So with such rapid growth in a relatively short period of time, do you know where these individuals were coming from?

IANNUZZI: Okay, yeah.

CARUSO: Were they coming from other industries, and they were making their way into biotech, or was this like these were my grad school roommates, and we wanted to start a company?

IANNUZZI: The latter is right on the money. One of the things that was kind of interesting is that Ted Green and Ivor Royston spoke to me a lot about how they – "Ted, what brought you here," whatever, and things of this kind. And it was in the first few years, in the first ten years, I'll be honest, the first ten years, everybody became transplants. What happened is these – first of all, in Hybritech, everybody – there was no audience of people here. The first thousand people of Hybritech did not really come from San Diego, it was 500 people, and say – they were people that the principles who came here from others, Baxter Travenol is the main one. I mean Baxter brought a whole bunch of people here for Hybritech for one.

They would all call their friends, and this is really interesting, and it was genuinely what I just said. It would call their friends. An executive would be here working as an executive, liking it, needing help. "I need to staff out my department. I need to staff out a new project, a new whatever." There's nobody in San Diego. They would literally call, get on their phones and call their friends in St. Louis or friends in New Jersey or whatever and persuade them to come here. It was definitely the jungle drums on a personal relationship issues, and as each group of masses of people would come here, the amount of business startup was staggering, but I found that I didn't realize was unique to San Diego these people would create a company. The company would then go at a certain level, branch out, have another company.

It was like new business formation was at a level was a fever pitch. It's always remained at that side. They would need more people. They kept more people would be coming, whether it's from the Bay Area, whether it's from LA, but mostly outside. So the bulk of the people were coming from outside of San Diego. Now granted, assembly line workers, some bench chemists and stuff would come from UCSD and SDSU, and USD and City College a lot at the beginning. But the truth is the core people were mostly outside of San Diego. I remember in the '80s, every new person I met in biotech had come from somewhere. Literally from somewhere, and this is one of the interesting things that I found is when CONNECT was founded in 1985, the story about how Peter – no, Dan Peg and Mary Walshok and – oh, come on, who is it? There were four or five people that got together to create CONNECT.

It was a case where UCSD had awoken up to the fact that a bunch of little companies were coming with a national profile. And don't forget, this was when Eli-Lilly had gotten Hybritech, and a lot of it was based on technology at some level or another had come out of UCSD. I mean in the sense that he's a research chemist there, that

like – yeah. And they got annoyed. "Wait a minute, we're not getting – what's in it for us? And legitimately saying, "Hey, here we are. We're getting jack from this."

"Well let's fix this. And one of the ideas, let's create an organization, which became CONNECT, which would be our organization" – which was UCSD's organization initially. "And that we would espouse support more entrepreneurial work based on our stuff." It's technology transfer that is not quite the same. It had that kind of – that's always been a trouble area in the university ever since. But nonetheless, it worked, and it didn't really work for a while until they got a superstar to run it, Bill Otterson, but that's another conversation at that side, which transformed at that level. They did transform the industry because Connect was technology agnostic.

Even though the biotech industry is what kicked it off, he was equally – because he came out of the software business. Cipher Data Products, Inc. was his company, and that's a software and storage, I think, if I remember. While he came out of the techie side, he became very much aware that this explosion was driven from the life sciences side. So he was very good in covering all of it, and I remember him coming to me in 1988 saying, "I've created this group called CONNECT." He didn't create it. He came on board because you know, the leukemia thing, you know the story of it. I don't want to get into this because that's part of that history.

And he said, "I need to have more service providers join our organization."

I said, "Okay, it'll be great."

"It'll cost you $2,500.00."

I went, "What the? What?" Agencies don't spend money. Agencies are very cheap historically. "We will trade work. No, no, no."

"It's $2,500.00."

It took me six months. He persuaded me. I finally wrote a check. I remember. That was hard, very hard. Never regretted it for an instant. He then brought me into the larger industry, and I'll go to meetings. I got involved with Springboard looking at business plans from the university and whatever on that side.

All of a sudden, the thing that was already starting to happen in biotech was a small number of people who knew each other really, really well, and we sort of had the

jungle drums by the phone at that time. It wasn't e-mail. It was all by phone. "Hey, we've got something going on we want to get together and talk about," so that's what people would happen throughout the industry. Connect created that on a larger level across industry. Telecom, software, and biotech on that side.

And ironically, four years later, three years later, that literally led to BIOCOM and the founding of BIOCOM only because we had this thing with the city where the city fathers were going to ration water, and literally ration water to the business community, which would have been devastating to the biotech industry. They were going to have four hours of water in the morning and four hours in the afternoon. Half-and-half. Disaster. And all of a sudden, David Hale went to Bill because we're all members of CONNECT. Let's be clear of that. And says, "Bill, you gotta fix this. Help me, help me." And Bill said, "We can't. We're a UCSD organization. We cannot lobby legally." I mean the UC -

CARUSO: Right.

IANNUZZI: "However, wink, wink, David, nothing is stopping you from creating your own organization and asking me to be a member of your organization." "Oh, and by that, that means we can help mobilize – indirectly, we can do that and support you." Of course, instantly David got on the phone and called 20 of his best friends, and then people to pay for it, which is me. He knew how to make – he got 20 CEOs that would be part of the package, and then he got like 10 or 16 service providers saying, "We're going to support that organization." We all marched on the city and let the board – let the city council know that this is going to be devastating. And the city council didn't know. They literally were like a deer in the headlights of a car.

They went, "Oh my God. You got 10,000 people to go out of work if you do this." And they were like genuinely shocked and stopped – and everything came to a stop. Well what happened is that at that moment, the industry became totally self-aware. "Oh my God, we have power. We can actually do things. We can go to the city council and get them to do stuff or not do stuff as the case may be."

And that's where BIOCOM came and became aware. What was also interesting is that that's where a lot of the technology groups looked at each other and went, "Whoa. Hey, this – we can do good. We can actually make it better for all of us." This was a very, very positive thing, and you have to appreciate that this was right after the aerospace community had just gone.

CARUSO: So this is -

IANNUZZI: '91. And so – because we're in the middle of a drought. This was a huge seven-year drought, one of the worst in our history. And the city at this point was reeling under a lot of bad things for the city. I mean the huge drought, the biggest in our history, the 50,000 people out of work, basically. A technology – what do you want to do with them? And what are we going to do with them? And this combination of things coming all at once was wonderful for the city. You mean there's all this other technology areas? Maybe we can train – maybe these technicians and engineers could – and it became then a concerted effort by all the technology areas, including the city, to try to see whether we can replace these people, move these people from one industry to the other, and there's a very long-term concerted effort to do that.

And I'll be candid, it was somewhat successful, somewhat not. The truth is they're not the same. An astrophysicist or an aerospace engineer is not going to be doing gene probes in a laboratory. And having said that, what did help is there was some of that happening. Enough of it happening that it just made this a nexus for technology. Ultimately, you have an IP brain trust in San Diego as a community that as you can see by accidentally had been here since the '60s. It came out of the research community.

It came out of the aerospace community. It came out of the medical device community. Even some former finance people because finance capital is not a trivial part of what we're all about, even though we're never going to be San Francisco or LA. Let's be real on this. Nonetheless, you have to appreciate something I've seen over the years. It's a confluence of when a remarkable group of things that accidentally had been here. And they all worked together. And one of the things that Forbes wrote an article in 2004, and we know it really well because we helped ghost write the article, was the fact that Michael Milken (and Michael Porter in Harvard) had done a study, and it was at a 100-point index of the best entrepreneurial places in America and the world to create a new business.

So one of the things that support new business formation – so in other words, if you have more of these things than another place, your better place is to create a new business so your odds of success basically are going to be greater. San Diego was number one in America. Number one. So if you're an entrepreneur creating a

business from scratch, the odds of success would be a little better in San Diego than any other place in America. And when that came out and I saw that, -

CARUSO: What year was that?

IANNUZZI: '04. The article was in '04. The research was before then, Michael Porter was at – and it was legitimate. I mean one of the things that Bill Otterson had talked about (before he was dead at this point) a lot was the fact that there's a lot of magical things that happen here and he calls it, quote collaboration, because people try to leverage the ecosystem in San Diego. This whole presentation here that we created for BIOCOM was about the ecosystem, the technology. Duane Roth got deeply involved in this thing through CONNECT on that side.

It was true. It's a true thing, but it's not – the word collaboration is not the right – it's the best term we can come up with, but it's a little of what I just said. All these ingredients being here accidentally and then kind of becoming a critical mass and then becoming exponentially more powerful as you go along. You could say, "You know, while aerospace engineers are not really integral to technology and they don't play well with others as most other places do, the fact that you had 50,000 of them here, excuse me, does something."

CARUSO: Strength in numbers to a certain degree.

IANNUZZI: Strength in numbers. You're going to have enough here and there who are looking for another career path because they just lost their job and they don't want to move to St. Louis. So you know what, I will work at $20.00 an hour, $10.00 an hour, and as a bench rat learning about this thing and this other technology because I love technology. I love science. I love – you know what I'm saying?

CARUSO: Right.

IANNUZZI: And other cities don't have that. Let's be really clear. You're not going to get that in Aliso Viejo. You're not going to find that in Santa Barbara. You're not going to – it's one of the things that's made San Diego amazing, and I've spoken to this. I like to feel I have some insight into this because I was there by sheer accident in this whole period of time. I came out of a technology base. When I think about aerospace, I can speak to that with some experience in that end, and I've had to present around the world on this issue. I've been to Bogota, been to St. Petersburg,

I've been to Saskatoon presenting on these issues exactly why did the cluster come out of this little sleepy retirement town. San Diego.

I mean it's a navy base as far as the rest of the world sees it. What the blank – where did this come from? What are the magic ingredients? Because I want to copy them. Guy, talk to us about the – you're one of the people that knows. So you go tell them that the truth is it's not helpful because the truth is you can't quite put those ingredients together, and I'll be candid, everybody is taking credit now. UCSD is, "Oh, we did it," and the city says, "We did it." EDC says, "We did it." Bull. Nobody did it. No institution did it. It was a -

CARUSO: It's a confluence of interests.

IANNUZZI: Thank you, totally. And they just – happy accident.

CARUSO: Now one thing I'm also curious about is earlier on, you were talking about learning about the entrepreneurial mindset, and I'm curious to know what – two things. What did people want to accomplish in starting these industries, starting these businesses in the beginning? Did they just want to have their own product and sell it, or were they more like today's companies where they want to get bought out by someone bigger? And has that changed over time, and if so, in what ways?

IANNUZZI: Good point. And it's kind of tricky because you're looking at three generations since. So at the very beginning, being bought by somebody was not the discussion. Thinking. Having Eli-Lilly buy Hybritech was, "Whoa." At that time, it was the largest sale in San Diego history at that point. It was not at all about wanting to be acquired and we're going to sell the company. The idea of going public was something that people were learning about, and that's a neat – we can make a lot of money doing that, but it's more like I have an idea that could become a product. Then we'll make a lot of money. Let's be honest. Entrepreneurially, you're driven by money, but you're driven by money because something you know really well that you can make happen.

So part of it is the ego thing of saying I can bring this – I can make this real. There's some technology. I know that the Milstein thing about – in the '70s is when Milstein Kohler discovered monoclonal antibodies. One is Argentina, one is – if I remember. And I remember reading the article because I'm a geek. I would read a little bit of that stuff. And I remember Ivor and Howard talked to me about the fact that they felt

almost that we can make this into a product. This thing can actually turn into something we can do something with. So that's what their research stuff was about, and when they looked like, "Yes, we can do this with it, let's do this with it." Of course then one of the nice things about capitalism is – all researchers, NIH, it's academic, but when it comes to applying this into real product, you have a choice.

You have to make it commercial. You have to make it into a product. You have to create a – translate. It's a translation. We have new terms now. These are not terms that were used in the '60s – I mean the '80s, let me tell you. It's tricky for me because I'll use the term today, but that's not the term they'd use then. So it was that. It was the fact that we're going to make this work. Let's get together and build a company. We can make a company out of this. People did not then look at that, "We'll make a company and we'll sell the company." No.

It happened organically, and then as people saw other companies doing that and being sold for a lot of money, bingo. For example, I have to say I'm very proud of the fact that the sale to Eli Lilly was an eye opener for an entire industry. I mean 457 or 27 million dollars in 1984, '85, that was a lot of money then. Half a billion dollars. At that time in today's dollars, it was about several billion dollars, and it's like – and the company was really small.

And I have to be candid, it was a failure. You understand that, the reason Eli Lily bought it, it never panned out. No therapeutics ever came out of – the therapeutics came out 20 years later with Idec, the first monoclonal Rituxan. Had nothing to do with Hybritech, even though they came out of the same group of people initially. But one went to Mountain View in 1984, '85, and came to San Diego in 1991 if you recollect. And I was close to Bill Rastetter, so we know a lot about that area, but there's no connection to be honest with you. And Eli Lilly bought Hybritech because they were hoping to translate some of that technology into real products, ultimately therapeutics, and it bombed. People discovered that monoclonals were much, much harder. I don't want to get into it on this one because, one, I don't understand all of it myself because I'm not into that technology.

But it took 20 years to make that happen. But it also – culturally speaking, it's one of those things where a large company's operational style was at complete odds with San Diego's entrepreneurial – and I mean not just San Diego, but entrepreneurial mindset. And I'll be candid, I haven't seen this succeed anywhere. We've seen Pfizer

come to San Diego, we've seen Merck come to San Diego. Each one of these, like Pfizer acquired through Warner Lambert Agouron as you know – you know the story. I don't want to walk you through, but there's been several dozen major acquisitions by big pharma and big biotech on both.

You could arguably say everyone has been an abject failure. I don't mean a little failure. How about an abject failure? In the sense that it hasn't jump-started that company who bought it, has not gone – created a bunch of other – like Viracept that Pfizer got it great. What other things have come out of San Diego for their acquisition here? Novartis has got GNF in here. Now they're part of a major research institution here at this site. But you haven't seen all of a sudden huge – they built a campus in San Diego, but you haven't seen the proliferation of them. You're looking at a bunch of companies. Pfizer, Novartis, Merck, Johnson and Johnson and Lilly are here. But not really.

They're not transforming the industry. This has not become a pharma capital, and not at all even close. Parsippany, New Jersey, is the capital of the world on that side. And we've been an agency for Merck in Parsippany. So the reality is it's always been a shocker to me, and I had last night at the cocktail party and the presentation that the genomics presentation with Craig and David and everybody. A company, one of the comments I made to my colleagues there, which drives me bananas, is the fact that here you have hundreds and hundreds of companies if not thousands of companies being spun out of whole cloth in San Diego. How many Fortune 500 companies are here today? How about two?

And we're three and a half million people, and what I was telling them last night is my wife is from Kansas City. Kansas City is 800,000 people. Fourteen Fortune 500 companies. We had six clients in Houston. Houston has 32 Fortune 500 companies and it's the same size as San Diego. What the heck is going on? What is going – and you'd have thought that these companies would have jumpstarted more companies. We're not seeing that at all, which drives me up the wall here, frankly.

CARUSO: So two follow up questions, given a rapid increase in the number of companies in a short period of time, I'm assuming that many of them are in competition with each other, direct. What was going on to distinguish those companies from each other, especially in terms of marketing and design and things like that? And also, I'm curious to know about – I mean we talked about the

interaction with other industries and things like that, but I was – I'm also curious about the trajectory after the '90s, the early 2000s about what you've been seeing since you mentioned that there are only two very large companies here. What's been going on, and was this in some ways just more hopeful than something that could actually be achieved?

IANNUZZI: Well, several things. First of all, one of the things that's kind of unique to San Diego, and we kind of learned this in the '80s. I'll be candid. It was organic in the sense that people never thought about it until all of a sudden, there it was that a whole bunch of little companies were being started, and very competitively in the sense that there was some new technologies. Let me give you an example. Gen-Probe was created, they do gene probes, they do diagnostic assays for STDs, sexually transmitted diseases, and TB, a variety of areas.

Quidel was here. Same guy. Brought a whole bunch of products, panels of tests for the same things. They're competitors. But they didn't care. It's one of those areas that became really clear to me because I was very sensitive to the competition issue coming from the other industries that I came from. And what I learned in the last – the first five, six, seven years when I would bring it up and people would shrug their shoulders. "You've got to be kidding." We should be so lucky as to have to worry about competing with each other. Look, we're just trying to get into the industry. I'm going to worry about competing with them? The competition is Abbott Labs. You know, multi-billion dollar companies are our competitors. Their sales reps destroy – or actually sabotage our instruments." Hybritech was finding that they literally would go to the labs – there'd be an Abbott instrument and a Hybritech instrument, and when the Abbott guy was there to – this is really slimy – was there to fix their instrument as maintenance, he would pull the plug on the Hybritech instrument, and stuff like that.

I mean and worse. Because I was at sales meetings, so we heard about this stuff. So people got – the competition was not about the other companies. Now there was another company called Monoclonal Antibodies, actually, which competed with Hybritech, but the competition was for investment.

Let's be clear, and this is almost 100 – I can say this almost 100 percent. It was for investment dollars. "We're going to go public and we're going to get the investment

markets to invest in us because Monoclonal Antibodies are going to be the diagnostic technology of the planet.

Oh, the competition is not for customers. The customers – they're such a teeny little company that who the hell cares?"

But when you're trying to get scarce investment dollars and you're trying to get the institutional markets to pay attention to you, it can be a huge issue. So when I did road shows, one of the things – we've become sort of authorities on how to do an investment road show, that was very conscious to us in terms of what other shows would the analysts be listening to.

Because the investment community likes peer companies. When they do an investment, for all that they want entrepreneurial companies that are unique, they really don't. They're scared out of their living wits for a company that has no peer company.

"You're going to invest in something that never has been done before?"

CARUSO: Yeah, it's uncertain.

IANNUZZI: Yeah. They never accept that risk. They'll say, "What other companies can I look at that do what you do so I can evaluate how you are in that space?"

"Well, we're the only one."

"Really?"

Frantically, you'll spend time trying to find a peer company. So very important. So you become conscious of all these kinds of issues. These companies are very conscious of that, so on a competitive issue, it was not a marketing competition issue. That never became – yes, you had to when you launch a product. You had to be conscious of what the other options a customer would have in a cost competitive market.

And usually, it was against the larger players because they're the standard. Typically, you're a small startup company going against what is the gold standard out there or the silver standard that may be Merck or whomever you're competing against. That's

who you're competing against because they're top of mind and never, "Who the hell are you?"

"We're this hot technology, state of the art breakthrough technology company in San Diego. "Oh, intriguing." Did you read about the Lenovo prize last year was about this technology, and we're coming out to market with that? You'll be the first hospital to be able to use this, and they'll have to time it at a quarter of the cost, yada yada yada…"

So there's ways to deal with it on that context, but it was not because there's another little breakthrough company working on something else. That conversation is to the investment community. It is not to the customer community. So be aware, that became a very, very real thing with time, and that grew, actually, if anything because you had these cycles of bubbles, investment bubbles as you like to – you know, the 2000 bubble in the tech software. We see the same thing in the biotechnology area, although it's coming back now.

Ironically, how bizarre. Right now, I thought this would be long dead for a long time.

CARUSO: So early on, you mentioned the nature of what you were trying to get out there when very – you know, Hybritech, what they were trying to sell and how you were trying to sell it to various companies, but you just mentioned that at some point, it really wasn't – so there was the David and Goliath and story.

IANNUZZI: Very much.

CARUSO: But that was for the consumers. But then investment communities playing a big role there, did – when you were involved in marketing and communications for these companies and you had knowledge of this investment community, did the strategies change for how you're constructing materials to assert the relevance of a specific company or technology?

IANNUZZI: Let me think. That's a very good question, actually, because in 30 years, 33 years, it has evolved a lot. To a large extent, it's evolved in terms of recognizing what the street, Wall Street, wants, and wants as an investment. In other words, not so much about what the investment itself is, what the companies are, or the look and tone. You know, what's the hot thing of this year. Usually, what's the hot thing of these five years. You don't say one year, but typically – because it's such a long

investment process. You know, to 20 years, a billion dollars if you're lucky. If you're lucky and you get a product, you can have 20 years and a billion dollars and get no product. I mean you know, a lot of our clients have been down that road, too.

But what ends up happening is the street tends to have changing drivers on that side in terms of what they see. You know, early on in the '80s, you've heard about the RIPCO and FIPCO model, investment model. RIPCO – FIPCO is fully integrated investment company. Yeah. We're going to be a company like Amgen. We're going to invent, we're going to research, we're going to develop, and we're going to market all our products. We're going to become another Amgen. Fully integrated pharmaceutical company. That's a fully integrated pharma – FIPCO. That was the model in the '80s that everybody wanted to become a FIPCO. And what the street – when a few of them made it, Cetus and Amgen and a few really big companies – Biogen, you know, started to get out there, and you had some real ones, but many didn't. I mean to be very candid, a lot of them got bought, they failed, they didn't have the money, they just got to Phase 3 clinical trials.

I mean the reality of it became hard. It became like our eyes are bigger than our cash flow and whatever. So you know what, we can partner out the product. We need to actually sell not the company, but we'll sell the product. Ligand Pharmaceuticals. Are you familiar with Ligand? Was a poster child for this. The largest pipeline in the industry, and it's a company we know intimately. We actually named – a matter of fact, you're looking at – here is we've done 150 IPOs, and here are – oh, you'll love this. Here are IPOs that we've done, a whole range of technology companies that you're going to see, and of course, we would do all the graphics and the stuff for the companies.

Just some of these are actually collectors' items I'm sure on a lot of these. But what became clear then is that the model was "…let's develop a pipeline of products and then sell the products to real marketers, companies that are fully integrated and who have a large marketing organization and whatever, whether it's Pfizer or whether a smaller company, it don't matter. And we'll do a multiple of these, and we'll get royalties. Now this is a weird thing because what happens is the payback is nowhere near as much. You know, five percent of something or ten percent of something, and like 100 percent of a blockbuster product."

However, if you do it well and you – and some companies became very, very good companies at this, you ultimately can make a fair amount of money, but it's a longer play, and it's not the deep pockets play that other companies can do. So that became a RIPCO. Royalty driven pharmaceutical company on that side. And it became the more common market, to be honest with you. Now that slowly turned into we'll sell the whole company. Because often what happened is a company that would buy some of your products pay royalty, woke up to, "Huh, that IP, that technology there, the hell with it." We'd just buy the whole thing.

Typically, like what happened to Santarus Pharma. "We'll just buy everything and to hell with the company and the people. They're gone. I want the IP. Goodbye."

CARUSO: Right.

IANNUZZI: Very common. Became very – so we saw that kind of a change. So over the years, we saw changes of that, so while we marketed it, first was a –

"We can become the next gen in tech." Later on,

"We have a pipeline of products that go to very targeted markets, and you as a company are in the respiratory – you're a specialty pharmaceutical company. You'll be a great partner. We have a – guess what. We're a respiratory product that can go into your pipeline of your products – your sales organization, your market."

So we would market that and say, "This company has got the ability to go into… –" because sometimes, it's a CNS company. You know, we're doing neurology products. I mean so typically, a company works in metabolic diseases. You typically then start looking at the companies as specialty companies. Now we had the good fortune of Dura of actually launching the very first specialty pharmaceutical company in history.

Dura Pharmaceuticals in 1991 was the very first company to create the idea of a specialty pharma company that said, "Hey, we're going to specialize in respiratory diseases, and that's all we're going to do." And a whole range of things on that side. It was kind of neat. It was kind of a home run and the company ultimately got sold to Elan. You know that story. Cam Garner from Hybritech who was the former marketing director and VP created this, another very good entrepreneur on that side.

So the model would change with what the companies wanted to do and what the street says you're being realistic, or you're not being realistic. We're tired of this,

we're not tired of this. Because that happened, too. What happens a lot of times, the street got simply tired of biotech investment because they were actually a miserable investment. To be very blunt, if you back away from this objectively, biotech investments have been miserable. If you're an investor in the last 30 years, this is not where you'd be. You'd have episodic examples, but the truth is as an overall, miserable place to put your money.

CARUSO: You mentioned that some of the tendency right now is for the larger companies just to come along and say, "All right, I'm going to buy just because it's easier to buy you and not deal with the royalty stuff." Were or are you aware of any initial reactions to these biotech startups that these large companies have? Were they just dismissive of some of these things? I know you mention Abbott. There was some sabotage happening.

IANNUZZI: No, that's very different. You're looking at that – that's more of a tactical issue in terms of sales people. On a more strategic point, no, I – no, dismissive is not the term. What became really clear in the '80s is that these little companies would go explore areas that these larger companies were looking, "Huh," and were interested. And like proof points. They would say, "This is really fruitful." The other side is it became really clear to everybody, and I mean large industries and to small ones, is that – and the people on the outside looking in that nothing was more efficient, kind of small biotech company exploring something.

You know, when you look at Pfizer or Merck and they have 6,000, 10,000 research people, the most – for what they get out of that research pipeline of multi billions of dollars spent is like a joke. I mean– right now, it's a disaster. We're looking at crashing and burning situation, but it's really weird because the industry has known this. It's not like this is a wake up and smell the roses situation. No, they've known this for 20, 30 years – I remember reading articles in the '80s in Pharmaceutical Executive – about the fact that big pharma is inefficient. This is one of those areas that last night, Craig Venter talked about and said, "You know, we're finally seeing something starting to happen in genomics that we've seen in high tech and biotech and aerospace – scale."

Up until now, we've not been able to scale biotech and pharma. We try. You scale sales and whatever. I'm talking scaling the development and creation of a product – it's all has failed. I mean you know – 10,000 researchers is not going to guarantee you

a product. Ironically, five hot researchers working this little garage startup in Silicon Valley or in Sorrento Valley, yeah, they might because you can do 20 different groups like this going 20 different directions, and they'll spend a fraction - the venture people know this. The venture people always were shrewd about this, and as a numbers game, you just get 20 companies, and hopefully two will – one out of ten, et cetera.

They play that. Now the big pharma saw the same thing, and that's why a lot of big pharmas then got into a venture arms. They created really large venture arms. You saw that, and that's definitely out there now. And so we're seeing that a lot. It's not dismissive. It's not – they're arrogant because they're big, but the truth is I think they're pretty savvy about what's going on. The problem is it's like a large engine, a large ship. They're having to evolve what they are.

They can't easily – Novartis now is, quote, rationalizing their discovery and development – last night, I was told by – who is it? One of the people you're going to interview tomorrow. Stan Fleming. And he says, "Let me tell you about Novartis." Novartis is my client, but he said, "They're doing what Pfizer just did a few years ago… "We're going to rationalize our research infrastructure, and we're going to – like Pfizer, we're going to have only four research facilities. One in Connecticut, one in San Diego, one in Europe, and whatever." Novartis is identical. They're going to have one in Europe, one in New Jersey – I'm screwing it up. One in La Jolla or whatever, three. And I've heard this over and over and over, but that's what they're having to do, and they're going to put more of their energy into going to the little companies and investing in the companies to the extent they can, and whatever hooks will work - royalty, an investment in a discovery process, a discovery early stage clinicals, you know, it's all different.

That's why they are not dismissive – they (small biotech) work – it's the future of big pharma.

CARUSO: So instead of spending the large research budgets, they're targeting more – I mean one of the things about smaller companies, smaller startups, there isn't as much overhead. Right? The expense to run the organization is much less. And so like you said, you could have five researchers in a room come out with something that's extremely useful, and the amount of money that you spend on the venture is so much less because you don't have the large organizational needs behind it.

IANNUZZI: Bingo.

CARUSO: So instead of investing in more researchers, they're now looking to just capitalize on the -

IANNUZZI: Bingo. Leverage. Leveraging things. And it's all different. And the BD people are very sophisticated. I've gotten to know them because of the nature of my business. I've gotten to know a lot of these people across industries, and it's one of those things that they're not stupid, but they're slow. What I mean is that the issue is that these are things that have to move a large corporation, and you'll meet individuals who totally get it completely, but they're trying to get the company, larger company to move down these paths, and they are moving down these paths. But you know, never fast enough. You might even argue that big pharma is going to die someday. I don't know. You can read whatever article you want.

I do like the fact that San Diego is the epicenter of a lot of this stuff. I wanted to actually show you a slide that is not trivial because it's about the last 30 years showing 30 of the biggest M&As in San Diego history. And with Life Technologies being the last one that literally happened – let me see if I can actually give you the – because it's a slide, and it's one single slide. I didn't have it ready for the meeting here, but I wanted – let me see. This is it. Voila. Let me actually – this slide here – let me do this large. How big can I make it?

CARUSO: Do you have a full screen option?

IANNUZZI: I thought I did. Oh, command L. That's it. Bingo, that's it. Thirty with Life – Life Technology. I can't type either.

CARUSO: So before we talk about it, just since there's no visual to what we're doing, if you could just give a brief description.

IANNUZZI: What you're seeing here is starting with alphabetically, Agouron, Alaris, Amylin, these are our – in the last 20, 30 years, the largest M&As in San Diego history, and they're mostly biotech. But if I read the list, you have Agouron, Alaris, Amylin, Biosite, Collateral Therapeutics, Cymer, Discovery Partners, Dura, Encoda, but you're having also – ending with Life Technologies, but a whole range of companies. And what this becomes $64 billion in transaction value, that these M&As generated.

CARUSO: If you need to stop.

IANNUZZI: No, it's okay. What ends up happening is that the M&As represent $64 billion. The bad news is this is all money that's gone. This is not money that stayed in San Diego. They've had – each one of these companies has a little residual something here, some nothing left here. The money has been paid. The investors got it, a founder has got the money. Now the good news for San Diego is it's got part of $64 billion. A good hunk of it stayed with people who are doing other investments. I mean I saw Greg Lucier last night who said he's creating another company, and by the end of this year, some of the money will be working here.

So in this sale, I'm not saying he made multiple billion dollars on this one, but some significant amounts of that money are going to stay in San Diego to create other businesses. My frustration lies in the fact that it hasn't created larger companies. You know, even when you have a company the size of Life Tech, which was a multi-billion dollar company on its way to being one of the Fortune 500 companies, it will be here no longer because it won't longer be headquartered here.

But what you're seeing, though, is each one of the things we're saying about big pharma looking at getting their pipeline from these companies, and that's exactly what you're seeing here. They're buying these small companies for the product line, for their IP, for the distribution channel, for the ability to get into a different market. It's a home run in that respect. So you're seeing – and that's the new model that the big pharma – and when I say big pharma, I also mean big medical device companies, you know, Boston Scientific.

CARUSO: I mean I don't have that many more questions, but there may be more things you'd like to discuss. One thing that I'd like to talk about a little bit is you described the explosion of things in the early '80s, the '90s, I'm wondering what if anything has happened to the landscape since that initial explosion of having so many companies here. I mean what's it like today, and do you have any perspectives on what has caused changes if there are any that have occurred?

IANNUZZI: It's becoming more institutional, which is normal. In the '80s, which was the early years, it was very anecdotal, seat of your pants, very organic in the context people just did what they did and knew each other or whatever. Now you had, first of all, associations like BIOCOM and CONNECT and associations like that, but now there are other organizations in town. You have universities that are all jumping on board to have large workforce training programs for biotech and for other

technologies on that side. You're seeing a city government that now says this is a big component. Each one of the mayor candidates and the mayors that have been here have had big meetings with the BIOCOM organization and whatever on that end.

You're having the governor came to San Diego to talk to us about some of the things that's going on here. So this kind of growth has led to a very visible institutional presence for the technologies and for the companies. And I'll be candid, it's a good thing in the sense that all of a sudden, an entrepreneur is saying, "I want to create a new biotechnology company here, and I need to have some help." There's a million places this individual, he or she can go to get help, whether it's financing, how they want to have their business plan vetted, and want to have some funds. Maybe the city can give them some funds to help do this. And there's a bunch of programs from the university, from institutions, from the city, and I've seen that become a good thing.

You have cleantech. You're having the other market areas that are more like crossover areas where cleantech has both technology and biotechnology, and even energy. You're looking at alternative fuels. There is a lot of industry going down to San Diego on that side. Now how much compared to a national level, I can't speak to. We're involved in some of that, but that's another area that San Diego – because of the same confluence I talked about in biotech – can start working in a big, big way.

You're looking at also in the biotech area things like stem cell research in San Diego. Now it's become one of the top hubs in the world. Several really hot companies, arguably some of the number one, two, or three companies in stem cell business are based in San Diego. And the venture people now pay attention, even though they're not really headquartered here. We tried real hard to get them to come here, but they really don't. They often have a little office or something, and that's the best we're going to get.

CARUSO: In terms of people that are creating these startups, are they still individuals coming from all over to settle here, or are you seeing – I'm just wondering if UCSD, given what they've invested in a certain respect, if you're just seeing a lot of people coming straight out of the university because they're already -

IANNUZZI: Both. This is interesting. First of all, I'm seeing now here, like last night, where there were kids from Canyon Crest High School, we have become a really hot little technology hub. Because you have High Tech High. So now from the high school level, a move in the city to train our people right through university level. And

that's starting to bear fruit. It's starting to bear fruit in the sense in the last ten years, I'm seeing people who now are born and bred here.

I'm a biotech and technology person. I've gone to college, I got a degree, and whether it's from here or Berkeley, I'm now located here. That's a good thing. But interestingly, I'm meeting new people every day that have not only just come to San Diego. Last night is a really good example.

We had 100 and something people at that meeting, and of the new people I met, half were people that have come out of the schools here, and half came here from Spokane, or from the Bay area or whatever. So the influx of people being attracted here has not really changed, but now you have the homegrown part, and I think that's a fabulous thing to have.

Now there are issues that have gotten worse. The cost in the '80s – the cost of living was not as great an issue. Now it is horrific, and so the reality is for people who come here (people who live here have learned to adapt to it) but the people who come here still get that initial sticker shock about the rental or living or buying, and they can't afford to live here. For somebody who is starting early on in the business as an employee or as an early stage entrepreneur, it's a challenge. Because one, it's a challenge to make your own survival and have money aside to do what you've got to do. It's a real bitch, I may say, to get other people to come here.

I want to put the example of what happened very often earlier on when people came here in the early '80s. San Diego entrepreneurs had friends in (let's say) St. Louis, "Hey, Joe, why don't you come over here? You're running a little department there. You're going to be there until you die. This is a waste of time. You're better than that. Come here, and I'll have you run this department, and we can make this. I'll give you stock options, and you'll become richer than your wildest dreams."

Now all that worked then. I mean all that was the package commonly offered. Now could you afford – I mean consider a home that's selling for $250,000 in Charleston Carolina. The recruit can use that money to buy a nice house in San Diego. Right?

CARUSO: No.

IANNUZZI: How about like a million and you're lucky to even touch that for what you had in Charleston for $200K. That becomes a real problem.

CARUSO: You can no longer have the trailers that people are working out of or that they were working out of that in the beginnings.

IANNUZZI: Yeah.

CARUSO: So has anything been proposed recently to try to address those issues? I know those are private individuals setting rates on privately owned properties, but has the city made any sort of attempt to -

IANNUZZI: I don't know. Honest to God, I wish I could speak with some knowledge because it's good to know. I don't think so. There's been conversations, but whether you have these income zones kind of areas or whatever – like the hub zones, they don't work at all for biotech because biotech doesn't start in the middle of the city in low income areas. It doesn't – the nature of the beast is it's an intellectual capital issue, and it needs highly – the thing you need for the technology explosion in San Diego, whether it's biotech or high tech, is intelligence. And intelligence – I don't mean you have to be brighter. You have to be trained. You have to be educated. You have to be able to work in a certain kind of team infrastructure where certain givens are things that come out of the university, coming out of the technology industry.

They do not come out of the barrio. They just don't, and that's the reality of this. I have friends in the barrio because I'm an artist. We're an art organization. So the AIGA has a lot of people from here in Tijuana. It doesn't come from there. That's why you're not looking at the technology explosion in Tijuana. Maquiladoras, maybe. That's a different discussion. So the reality is it's going to have to be here, and as luck would have it, which is not uncommon in most cities with a biotech hub, it's in the most expensive part of the city to live in. North County, excuse me, is the worst place in the city to create a business and to live in terms of money.

Because the cost of paying for the real estate, the cost of the square footage, the cost of living there, whether it's rental or not is extremely high. It's the highest in the county, and it remains that way, and it's never changed, and it's going to get worse with time, not better. So I have no answers to that. I think it's Darwinian. People will cope with it, and I don't think it's going to slow it down. I think if I wanted to create a business, I would do it here. You know, for all that I've got to pay more.

CARUSO: Have you heard about anyone who has chosen not to be here because of those restrictions or left?

IANNUZZI: Yes. There are other places where it's a little easier. Austin, San Antonio. Up in Washington state. Spokane has got a lot of San Diego people in Spokane, Washington. We're seeing things in Salt Lake City. There's a lot of that going on. Whether it's enough to worry you, I mean I'm Republican and I have issues with the state on taxes and whatever, and you can't argue in the last two years, 60 companies have left the state – major companies. And look at Google, what Google is doing, and Elon Musk, my hero, and you know, the new $5 billion battery company ain't going to be here. Good reason, yeah, but I think ultimately, this is not just about San Diego. I think the San Diego infrastructure is well aware of these issues.

But we're limited in what we can do, exactly what you just said. Part of it is private enterprise. It is what it is. We can't change the ransom. We can't change the housing prices. And we can't change most of the taxes either, to be very candid. The state taxes and the federal taxes are what they are. And you have now the city taxes, and you're looking at things like LA where the tax is going up. There's no answer. I think an entrepreneur will make it work no matter what. If you have a dream, you have an idea, and this idea is going to make this fantastic thing happen.

It's going to make you wealthy, it's going to make your friends wealthy, it's going to make you build a terrific company, and get this wonderful thing out to market to the universe, you don't really care. You're going to cope with this, so the truth is – you know, it's funny, when I created my business, it was in 1981. We were in a depression. There were no jobs to be had in the advertising industry. I remember visiting all the ad agencies. "You've got to be kidding. This is the worst downturn in our history, and this is 1981." You've seen this over and over and over.

People will create businesses irrespective of the climate. I mean the economic climate. Irrespective of the money, the taxes, and whatever. It's just that San Diego is still the most wonderful place to live in, and what I've said should make it really clear it's one of the most wonderful places entrepreneurially to work in. You have a support group, a support network of peers, of support people, in all industries. "I need accounting services. I need banking services. I need people who will help me do this and help me do that."

They're all here. There's hundreds of them, not a dozen. Hundreds of them. And I can negotiate at any price point I need, people would help me. I can get interns to work for me for next to free, and who are really intelligent and have tremendous

background on this side. So Michael Porter was right in 2004. This remains, I think, one of the best cities on the planet, not just on the US, to create a technology business from scratch.

CARUSO: The last question I have is actually to kind of turn things to you. I always like to know – I have my own structure and my own goals for this type of interview. I explained to you a bit what the project was about. So I'd just like to ask is there anything that you would like to discuss that I have not asked about. I just like giving people a chance.

IANNUZZI: That's hard.

CARUSO: Hopefully I covered everything and so the answer is no.

IANNUZZI: You covered everything that I think is important. The thing I say that you keep in mind – one thing that does help San Diego a lot, and I remember last night I met Malin Burnham, and some people who have been here for a long time in San Diego. Because of San Diego's incredible living environment and culture – it's kind of a cultural place, I think, even though you could argue that people on the east coast will say, "Come on. It ain't Philadelphia, and it ain't New York." It's a wonderful place to be and people will stay here until they die. They become a – what's the term? A resource to the community. Malin last night talked about ways we should all get together as a group, and we may coming up in a few months, of finding new ways to work towards letting fewer companies leave.

You know, this kind of thing we're talking about. Why there are no Fortune 500 companies here. I'm realize that this is a man who helped move the stem cell program for us and a man who persuaded – he and David persuaded Duane Roth to run CONNECT, which transformed CONNECT again and gave it a rebirth. We have the most extraordinary people in San Diego that love living here, and therefore we're blessed, so we don't have to fight to keep them. We fight to keep their companies from being sold.

We don't fight to keep what I call the intellectual social emotional capital. I call it a little bit of that. It's a great place to live. It's a great place to work. Craig Venter, while speaking to me last night, – he says, "Guy, look at this." And we're looking from the Stanford Stem Cell Facility Consortium and we're seeing the ocean. We're seeing La Jolla, and we're looking. It's like no, there's no place on the planet we want to be,

which is an asset that we have in San Diego, and it would be fun to use it more aggressively than we do, although when you're asking your friend to move here from St. Louis, you don't pull punches on this either.

CARUSO: Right. All right. Well thank you very much.

IANNUZZI: A pleasure.

END OF INTERVIEW

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The San Diego Technology Archive (SDTA), UC San Diego Library, La Jolla, CA.

The San Diego Technology Archive (SDTA), an initiative of the UC San Diego Library**,** documents the history, formation, and evolution of the companies that formed the San Diego region's high-tech cluster, beginning in 1965. The SDTA captures the vision, strategic thinking, and recollections of key technology and business founders, entrepreneurs, academics, venture capitalists, early employees, and service providers, many of whom figured prominently in the development of San Diego's dynamic technology cluster. As these individuals articulate and comment on their contributions, innovations, and entrepreneurial trajectories, a rich living history emerges about the extraordinarily synergistic academic and commercial collaborations that distinguish the San Diego technology community.