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**IRVING WLADAWSKY-BERGER:** OK, so in the last few classes, we have focused on executing a strategy in the marketplace. And as you know, we talked about, in the IBM case study, executing the e-business strategy, which is really the combination of the internet and the enterprise. How do you bring all the qualities of the internet-- remember, we're, going back 10 years-- to the enterprise?

We looked at the problem from two points of view. One was the organizational factors, and we looked at balance between proprietary and open in formulating a strategy, building something in-house versus partnerships, picking the right offerings, and then we didn't spend too much time on financial and market measurements, but talked a little bit about it.

And then we talked quite a bit about time to market and prototyping. And especially, I think that the presentations we had from Chris McCormick of L.L.Bean hopefully helped in these questions of end-user-based innovation partnering the importance of doing that because, as I told you, the reason I wanted Chris here is when he was the VP of Marketing at MLB, and he was really IBM's key partner in launching e-commerce.

And it's interesting to hear from his point of view why the internet was so important to them, what they were looking for from the internet. And we were looking for a launch customer because market-facing innovations, you need to experiment. In the marketplace. You can't just do it in the lab. And that was a very good mixture where we each got out of it what we wanted. And it's a relationship that has continued to be very good.

And then we also talked about the huge importance of marketing and of clear messages. And I really wanted you to hear from an expert here. And that's why I hope you found Chris Wall's presentation interesting. I just got his slides in Windows form, so I'm going to post them in the next day or two.

And I don't know how many vice chairs of advertising companies talk to engineering classes, but I honestly think it is a really important thing to do because when you're doing something, when you're taking something new to the marketplace, you need to explain to the marketplace what you're doing. And you need to get what I would call brand permission from the marketplace. The marketplace has to let you do that.

And if you say, well, that's bullshit, you just tell them and they'll flock to your door, I guess you all have been around working to know that we all wish that were true. But in fact, this is really, really difficult to induce your brand and to infuse the new product that you want to bring to the marketplace with the kind of qualities that will cause people to want it, whether those people are other businesses or whether those people are consumers.

And that's why the whole brand, branding, and developing a strategy, and communicating it, and doing it at an emotional level, and so on is so incredibly important. I know those are not words one normally uses associated with engineering, but especially with complex disruptive innovations, they are incredibly important.

Remember, when people say, I don't know, the iPad or iPhone are must-have products, that's not a technical statement. Somehow, they've done a good job in convincing people that having them makes them really cool, and that's why they want to have it. And that convincing takes a lot of hard work, like, a lot of hard work. And now you could say, well, but, Irving, we're engineering executives. Why is that our job?

Because the reason I think it's so important is that you all often have the best feeling for why this is important. The passion that motivates you to want to do that-- that's what you need to communicate to them, the professionals, who will try to translate that passion into how to communicate it to the marketplace.

And you can say, well, I'll use an intermediary who's-- I know MBAs are wonderful, but I'll use an intermediary who doesn't understand at all this stuff, but they are really whiz with numbers. And passion by numbers is not as good as first-person passion, which, in the end, is what you need to communicate. So that's why I thought that was important. And I hope Chris Sharp's comments were useful. Please?

**AUDIENCE:** So what we're talking about here is the marketing, and you have engineers. And it was a time where they were totally separated. But you're talking about the engineers stretching, if you will, to reach out to the marketing so that they can catch the inspiration and then be able to take that a little bit further and being a voice. In your relationship with the guy from L.L.Bean, I'm curious as to who did the more stretching, if it was you doing the stretching or if it was him doing the stretching as far as understanding the importance of the technology.

**IRVING  
WLADAWSKY-  
BERGER:** Well, I think, in that case, in end-user innovation, you usually-- it's finding the right match. We needed somebody that we didn't even have to spend a year convincing them that e-commerce was important. We needed somebody who knew e-commerce was important, or who felt it, and who then put incredible pressure on us to get the damn thing done for them in time for the Christmas season. Don't underestimate the importance of having deadlines. I mean, having deadlines is really healthy, because, without deadlines, it's easy to keep going.

And there was a natural affinity with e-commerce and catalog companies. And that's why it was a very good match. There were no big IBM clients before, almost nothing, I think. I don't know how we found them, but we found them, and that worked really, really well. But I think it's a very symbiotic relationship, where we each get from the other what we're interested in. And this symbiotic-- symbiotic, collaborative, it's a true collaborative relationship. They're very important.

And of course, it also helps a lot-- by the way, part of picking a good partner with end-user innovation is you want to pick somebody you get along with or that you think you will get along with because, trust me, bad things will happen. You'll be late. The thing doesn't work. And if your partner is a mean bastard that will say, well, I'll sue you, whatever, well, that may be a fine person to be a client that you're selling an already mature product because you'll sell it to anybody. But that's not a good partner at the early stages, when you are very fragile.

I mean, the reality is this stuff is really fragile. And often-- let's say we sell L.L.Bean. We had to send people from the lab to spend weekends with them because it didn't scale. They had bugs. They couldn't find the deal. Yes. All the usual stuff that you would expect was happening. And you need them to have faith in you and as long as you're responsive. I mean, if they call with a problem, and you say, well, we'll send somebody in a week, that's really bad. They have to believe that you're sending them really good people immediately. But you need to find that kind of chemistry. And that's not always easy to find.

Also, they're are very serious people. Doing e-commerce with L.L.Bean was good. Also, there is a match with the brand. There may be other places we could have done e-commerce that, for somebody else, would have been a good match, but not for IBM.

**AUDIENCE:** So IBM has marketers. But instead of marketers dealing with marketers, your engineers would deal with it.

**IRVING WLADAWSKY-BERGER:** Well, remember, we're talking about disruptive innovations. Remember, most of what IBM and other companies do is more the next version. It's incremental innovation. And incremental innovation, you generally don't involve the senior people of the company. In incremental innovation, it's more business as usual, the next release of the product or whatever. So we're talking about something brand-new that doesn't exist.

And when things are brand-new and don't exist, my opinion, the relationship has to be at a much higher level, with principles that will shake hands and will go-- and it doesn't have to be the CEOs. But it has to be people who are senior enough because, at some level, it's like looking in your eyes that you can do it. And they also know the higher up you are in the company, the more you can deliver versus somebody who is less high up. They may look in your eyes and say, yes, yes, yes, but they may not have the authority.

So disruptive innovation, doing new things is different from the more incremental products and services, which, by the way, is the bulk of what any company does. Otherwise, it couldn't make money. Well, it's the bulk of what any mature company does. Obviously, if you're brand-new, whatever you're doing, by definition, is all you do. Any other comments? Please?

**AUDIENCE:** Can you talk a little bit about the trade-offs and picking the right set of pilot customers? So L.L.Bean, for example, you could have gone with a much smaller vendor where you may have focused on the functionality first and not worried about the scale of the business much smaller. You could have gone the opposite way. You could have picked a much larger, one which would have maybe not achievable in the first. So do you find that?

**IRVING WLADAWSKY-BERGER:** I honestly don't know. I think there's no science here. I think you more or less decide for this particular offering what's the right-- what kind of vendor are you comfortable with? What kind of partner? For example, in advanced supercomputing, the partners are always national labs and universities.

IBM has two big petaflop project. That petaflop is 10 to the 15 operations per second, which is a lot. That's a big supercomputer. And one is Los Alamos National Lab, and the other one is a very large NSF center at the University of Illinois in Champaign, Urbana.

And in those cases, both get money from Washington-- NSF and DOE. But in those cases, Los Alamos is different from most other places. So that's an example where you're stretching out there. It really depends. I don't know if there is a hard-and-fast rule. It really depends.

Often, you will pick a pilot with a department of a larger company. And again, you correctly set expectations. It's a pilot. And everybody's comfortable. Versus somebody who says, well, when can it be in production? We don't even know if the damn thing works, let alone when can it be in production. So I think that's why you have senior people. You're having relationship negotiations until you find a match, and then you start executing. And I don't know if there is a hard-and-fast rule, or at least I'm not-- I don't know that.

So let's switch in the last two classes before then we go to the presentations to talk about organizational and cultural issues. Now, sometimes people think of this organizational cultural issues as politics or things like that. These are the most dangerous aspects of any new project, is dealing with the people within your own organization.

Anything new, the bulk of the organization is just not going to be comfortable with. One way or another, remember, it's almost like the same reasons you're doing it to be disruptive to competitors. It's also going to disrupt your own organizations. And organizations don't like to be disrupted. So these are really, really, really tough issues.

And what is very important-- and if there is a key message that I would like you to have is that the same amount and the same energy you would put into developing the technology and the technical system, and later developing the marketing strategy and plans, needs to be applied to the organizational issues. And that's often a mistake that technical people make, because technical people often feel, well, Irving we're pure. And we're pure engineers. And this is politics. That's for-- I don't know. Everybody knows MBAs and people like that are heathen, and they'll do whatever they need to to get money. But we are pure people.

And then they get creamed, and they get creamed by the very politics that they ignored. And let me tell you, you can go around and say, yeah, but I didn't play the political game. People may say, well, you're a schmuck. I mean, nobody's going to say, well, I know you work very hard. You spend millions and millions and millions, and then you couldn't sell it internally. Poor guy. That doesn't happen. They'll say, You're an idiot. And we picked the wrong person to be the leader of the-- I'm being dead serious.

I cannot tell you how many times I have seen-- and this particularly applies to technical people from the R&D labs that are uncomfortable in the mixing it up that has to happen in organizations. And one way that I think I feel very strongly works is look at it as problem solving.

Put a level of objectivity that just like you're solving a problem, when you're architecting the technical solution, you're solving a problem when you're not trying to architect the organizational solutions-- different kind of problem, different kinds of components, different elements. But the same herbs of energy that go here should go here. And that's a message I really would like you to take to heart, because, as I said, it's one that often Very technical people don't do.

And we've discussed first the paper by David Nadler and Michael Tushman, which I think is a very good paper, that organizations don't like change. I don't know how else to say that. And having the ability to implement this continuous change is a huge, huge, huge importance to an organization. And those organizations that are not stable don't know how to implement disruptive change, discontinuous change.

To be honest, they'll die. I don't know how else to say it. It's like having a biological organism that is not able to adapt to changing environment in a Darwinian sense. And they will eventually die. And the same thing is true here.

Now, I'll keep saying Tushman because I know Mike Tushman fairly well. I don't know David Nadler. Tushman looks at organization changes in two key dimensions. And these are all things that we've discussed before in different contexts. But I think it's good to look at it from an organizational.

The first is the strategic dimension, where the change you are making is organization-wide, as opposed to the change you are making only affects an incremental unit. Almost by definition, a disruptive technology, a disruptive innovation, is going to be organizational, is going to be strategic, is going to affect the whole organization almost by definition. Whereas almost by definition, a more sustained innovation, in Christensen's terminology, is one that affects a specific department in, and it's the incremental thing.

And then they also look at the changes in the dimension of, are you reacting to the change? That is the change happened. Your competitors are doing, others are doing it. And now you have to figure out how you respond to it. Or are you anticipating the change? Is this something that you very much want to happen, so you are ahead of the game?

And then they do in a matrix. And I didn't do. If I were better at PowerPoint, I would have shown you the matrix. But there's only so far that I want to become an expert in PowerPoint.

And they mix this up, and they talk about organizations being adaptive when they are incrementally responding to changes or tuning when you are incrementally anticipating changes and getting ready for it. But on the strategic front, when you are reacting, you recreate the organization and when you anticipate. It doesn't matter what these terms are. I've never heard these terms outside of the paper. Yes?

**AUDIENCE:** I would say, there's probably another dimension of change, which is whether it goes top-down or bottom-up. I mean, sometimes the founder and the CEOs, the top management, are flexible enough. And they instill that culture in everybody. And other times, they just empower everybody to--

**IRVING WLADAWSKY-BERGER:** Yeah. Well, we'll talk about that. But I would say, what you're saying, which is true, I think it's complementary to these dimensions because-- in fact, we will talk right now. And we're clearly going to focus on strategic changes. And now we're going to talk about, what kind of leadership do you bring to affect strategic changes? And I agree totally.

This question of top-down and bottom-up are very, very important, especially because I am convinced-- and we should talk about this. It's not quite the point of the two papers we'll discuss. I think we are in a big shift in organizations, where traditionally, changes in organizations came top down for hierarchy. And for a variety of reasons, more and more, I view the changes as communities in the organization are getting empowered because of the internet and other tools. So they are causing change. And so whereas before, it was all top-down, now it's more a combination of bottom-up and top-down.

In fact, the way I see it, for the most part, change starts organically for the most part and percolates in the organization for a while. And then eventually top management has to discover it because, remember, resource allocation. You can do a lot organically. But usually, most organizations aren't going to let you reallocate budgets organically and things like that. So eventually, it reaches the point where you start involving top management, and then you need the combination of the two. And I think that's a fairly new model that actually not too many businesses are comfortable with yet.

And again, I don't think we need to spend and too much time discussing this. But it's another manifestation in the paper of why strategic change, either in response to a disruptive innovation or because you want to reframe the market and you want to cause a disruptive innovation, which is what the second point is, are so important.

This point, by the way-- it's a very interesting difference. If something happens and your job is to catch up, usually you sometimes are in crisis. Something happen. It's a major thing. Your competitors are already doing. You have to move.

The ideal way to cause change-- and I think now we get back to the importance of having a really good R&D community-- is continuing with the analogy I've been using of disruptive innovation as an asteroid. Here, the asteroid already hit, and you didn't know it was coming. And this environment changes.

What's interesting here is you see it coming before everybody else. Now, usually, the people who see the damn asteroid usually would be your R&D people. Either that, or you need new R&D people. I mean, if you have labs, and you say, my people are wonderful, and the technology is changing around them and they don't notice it, you better fire them and get new ones. And the better the people here, the more they will anticipate.

Now, what is so important in being able to anticipate is, as Tushman and Nadler say, you now have the luxury of time to frame the market. Now you're getting to talking to people with the skills of Chris Sharpe, whether they are outside people or inside people, where you can start discussing this is happening. So how should we frame to the world what's happening in a way that advantages us?

And remember, when something is new, nobody knows what the hell it is. So framing the problem is a gigantic part of market strategy. And he who first frames a problem, if successful, has, I cannot tell you, the advantage over competitors who now have to follow your framing of the market. And if you framed it, and you did the right job, you framed it to advantage you, and you put your competition at a disadvantage because they are playing the game in the way that you framed it.

And that's why, if at all possible, you want to be in this position. And you want to start planning for the reframing of the market in response to the new technologies as early as possible. Please?

**AUDIENCE:** I was going to say that most organizations have junior people, people on the front end, who probably see the change probably sooner, and then the very senior people who are more likely to accept change, and then the middle group, who are, in general--

**IRVING** Change-averse.

**WLADAWSKY-  
BERGER:**

**AUDIENCE:** --change-averse.

**IRVING** Yeah, I agree. That is a good way to say it.

**WLADAWSKY-  
BERGER:**

**AUDIENCE:** So how do you jump the middle group? Because everybody talks about you need overhead cover. You need this. You need that. I'd rather jump in the middle.

**IRVING  
WLADAWSKY-  
BERGER:**

Right, right. And remember, the middle group is change-averse because, generally, the middle group is who the top group looks to make the numbers. Don't underestimate that. It's not that the middle group is a bunch of idiots. It's that you told these people, make the goddamn quarter. That's their job. And if these people's job is to make the quarter and some kid from MIT comes up and says, great ideas, they get lost. I don't have the time. I don't have the money.

That's an area that is changing rapidly in the following sense. I think in classic organizations, because of the more hierarchical structure, it was very difficult for some young kids to rise up. It's very, very difficult. The advice I give everybody is start working with your peers. Act like a guerrilla warfare. But I mean that in a very positive sense, which is start collaborating inside and out. Obviously, you have to be careful with confidentiality. But if you are advocating a new idea by yourself inside the firm, they'll say, well, what do you know?

If you find kindred spirits at good schools, at other organizations, and when you are advocating your ideas, you say, these people at MIT, and Stanford, and Berkeley and whatever are doing that. And remember, also, in one of Christensen's chapters that we talked about, don't underestimate putting the fear of God in the organization by saying, and these competitors are already doing it. Oh, it has to be true. You're stating a fact that's true.

And in the past, if you're a junior guy, you had no-- how do you get all that information? And how do you communicate with those people? Whereas now, with communities and organizations, that's happening a lot more. Now you get into a cultural thing. Will the middle managers tell their people, I don't allow you to do this?

Some do. But that's an area top management can really crack down, which is that's not the culture we want in this place. And really, that that's very cultural. Do you want an isolated organization? Or do you want an organization that is in tune with what's going on out there with universities and so on? But a lot of organizations don't like that.

I mean, I remember when the web first came out in the mid '90s, a lot of businesses wouldn't let their employees access the web from work because they assumed they'd be accessing X-rated sites and other things, and they thought they'd be wasting their time. I mean, that's really unenlightened.

And with blogging sites and virtual world sites, a lot of companies don't let their employees access Second Life and other sites, again, because they think they are playing games. Well, if somebody is playing games when they should be working, fire them.

But you want people, and especially you want your good people to be in touch. I mean, if somebody is supposed to be soldering wires in the manufacturing line and they are accessing blogs, we have a problem, or they are waiting tables and the customers can't be served because the waitress is accessing incredibly philosophical websites, that's not a good thing. But for a segment of your population-- knowledge workers, information workers, however you call it-- I think encouraging them to be out there is extremely healthy because that's how you find the asteroids.

Really, more than anything else-- I mean, there is so much knowledge out there, you can't have all the experts in-house. But if you have people who are in touch with communities, they will learn from communities what's hot, what's not. And they will figure things out. And you want that because they are bringing the outside knowledge inside the firm. And that's why I think that cultural shift is so critical. And I wish it happened in more and more businesses.

What do you all think? I mean, you've all been working out there. Has that been a problem at all in the companies you've worked on? Please?

**AUDIENCE:** My company, I think, is so recent, we don't want people to be 100% loaded with work. We hope that the remaining 20% of their time, they can actually go and browse and do something very interesting that in the long term will pay off. And short term, the long term impact.

**IRVING  
WLADAWSKY-  
BERGER:** Are they paying for--

**AUDIENCE:** I didn't ask them. If I asked them, they probably would say yes.

**IRVING  
WLADAWSKY-  
BERGER:** Yeah, I understand.

**AUDIENCE:** I've noticed people seem to self-select the entire staff. So in other words, if you're a more disruptive kind of younger-- maybe not younger, but lower-level employee, you try to self-select as a management team that's more receptive to that. So you end up with entire-- from you to the CEO.

**IRVING  
WLADAWSKY-  
BERGER:** But you may select also companies that have that.

**AUDIENCE:** You may select a company. But even within a-- I work for IBM, a really large company where you have-- that's what I've noticed is instead of having a middle management where the entire middle management is stuck with the status quo, it's where you have this disruption. You notice that people work for them or all also in.

**IRVING  
WLADAWSKY-  
BERGER:** Yeah. Well, because it's cultural. At some level, you're selling the culture of the organization. And it's not just the CEO that sets culture, that we're talking now is different levels of management culture. And again, what really is a middle management is they are stuck between strategy and operations. That's the dilemma of middle management is you have to be ambidextrous.

**AUDIENCE:** It seems like IBM software group is going through that now with the lean and agile transition, where it started as a wiki or a small group of people trying to get the word out there and then getting buy-in from some upper-level management. And while it's not mandated, it's starting to filter out through there as well. But you're seeing some groups that are more resistant than others. And from the slides that you showed, it looks like that's an in-between reorientation and--

**IRVING  
WLADAWSKY-  
BERGER:** Yeah, yeah.

**AUDIENCE:** There's not an immediate threat. But it seems like there's an imminent threat at some point--

**IRVING** With blogs, and wikis, and so on, you mean?

**WLADAWSKY-  
BERGER:**

**AUDIENCE:** Just with the whole agile development approach as opposed to the traditional.

**IRVING** Yeah, mashups and things like that. Oh, absolutely. I think what's going on with mashups, and widgets, and  
**WLADAWSKY-  
BERGER:** widgets, and stuff are part of that, I think that is phenomenal. And I mean, obviously, if the Federal Reserve Bank said, we will now do funds transfer using widgets, I'd be very worried. And I would advise them not to do that. So you have to pick your segments.

But outside the absolute mission-critical segments, the amount of innovation that you can do with agile development, and also the whole notion of casual applications that, until you know more about it, throw it out and do it again is OK. And that's a whole movement. I view that as an outgrowth of Web 2.0. Wouldn't you say that it's all an evolution of that? So yeah, I think every company needs to pay attention.

And what's difficult-- and this is why the cultural things is are so important-- is, remember, if you use it in the wrong place, it'd be disastrous. But if you don't use it in the right places, It's also going to be disastrous because you'll fall behind. I mean, you have long development cycles, and your competitors are killing you. So you need that dialogue to say, what's the right balance when you have to use the more rigid development cycles? And when can you use, the more open ones?

**AUDIENCE:** It seems like there's a risk too. And this relates to L.L.Bean. If you choose the wrong projects that really have no chance of success and it's a pilot, then there's a good chance that that entire movement could be squashed.

**IRVING** Absolutely. Yeah. In the early stages-- that's why, in the class project, I keep advocating do a first phase that can  
**WLADAWSKY-  
BERGER:** succeed because once you're in the marketplace, life is different. It's almost like getting on first is really difficult. Once you're in the bases, you're changing the game. You're messing with the picture. I know it's after baseball season, but I don't know the football equivalency. I guess you are close to the goal. But you--

**AUDIENCE:** Disruptive footholders.

**IRVING** Yeah. You have a foothold in the marketplace, and you're beginning to get real marketplace feedback. Whereas  
**WLADAWSKY-  
BERGER:** before, you're in the lab. You're not in the field, playing the game. And that's why, for marketplace innovations, in particular, getting there quickly is so important, which is why so many-- you may not notice.

It gets back to the casual thing because you may not be able to get that with the fully tested, scalable everything else. But as long as you tell your Users, This is a beta. It's a widget. It's something. It's experimental. They'll be very forgiving. They say, well, it doesn't work. Well, well then don't use it. Well, but I'm a smart person. Well, then use it. And you get a self-selection of people who are willing to use it or not.

But that's very cultural, whether organizations feel comfortable doing that or not. And it's cultural, as you were saying, down to the middle management level, because even within a very open organization, you can have a very anal middle manager. And I would advise that person they should move to a more operational side of the house where what the finance, what they're doing makes sense, although they may not have any finance. So you have to find where you fit.

Also, in a world like now, where there are so many companies, as you all-- I mean, you all have jobs. But as you all look at the market, these are all things you want to find a good fit between what you are comfortable and the culture of the place you work in, because the better the cultural fit, the happier you'll be, and the more they'll appreciate what you're good at.

**AUDIENCE:** I took a class at Sloan by Professor Tom Allen called Organizing for Innovative Development. So in that, he says that there are three ways in which outside knowledge comes inside an organization. One is by the written word, if you look at journals and all.

The other is you have certain people, few people in the company who are like gatekeepers of all the information that comes from outside, because they are the real people who actually read all those journals. Not everybody does. And so it's really those gatekeepers who need to have access to internet and everything, anything that can be disruptive to everybody else. I don't know if that fits into--

**IRVING WLADAWSKY-BERGER:** No, it totally does. It gets into a question. Let's talk about leadership here because, remember, at some level, you want your organization to be as innovative as possible-- and let me repeat, asterisks-- while continuing to make the goddamn quarter. So make that assumption because if your organization says, oh, the CEO says be innovative. Screw shipping stuff to clients and so on. You have about a quarter and a half to do that. And then the CEO is gone and so are you, probably.

So if you want to do that, one of the things that was interesting in the Tushman-Nadler paper is they were saying, what kind of leaders do you want to encourage that kind of innovative behavior? And they mentioned the notion of the charismatic leader. And they define these three key qualities that the leader should have.

One is envisioning, which is really the ability to earn articulated very compelling future, Energizing, which is be so excited about it, so much energy that their energy transfers to you. Their excitement causes excitement in you. And you want to do that. And then enabling in that, and they will help you do that. When you say, great, you got me all excited, they will actually then sit down with you.

Now, what's important to your question is that-- I mean, at some level, for whatever job people are doing, you want them energized, and you want to enable them. I would say, but so have a lot of other people, one of the critical differences between the Toyota way and what has been the classic Detroit approach is the way they treated the people on the manufacturing plant floor.

And Detroit, because probably the history of union conflict, it was just a totally hostile relationship. In fact, I'm not sure to this day it's gotten much better. And the notion of the top of the company in a believable way, addressing things-- we want your help. We want this I mean, even 25 years after all this has started, even today, I don't think it's there. Would you agree with that?

Whereas in the Toyota way, the quality circles. And this is real. I mean, I've heard the Toyota senior executives, including their present chairman speak, could see these people were really doing that. You're energizing the people. You say, our vision is-- I mean, you don't want them to design new cars in the manufacturing plant floor.

So what you were envisioning is a Six Sigma, zero defects. Don't underestimate zero defects is a hell of a stretch goal. And you were energizing them. We need your help to do zero defects. And you were giving them tools like, when you see a defect, stop the manufacturing floor-- which I don't know what the-- I'm sure there is a Japanese name for.

**AUDIENCE:** [? Andon. ?]

**IRVING** I'm sorry?

**WLADAWSKY-  
BERGER:**

**AUDIENCE:** [? Andon. ?]

**IRVING** That's what it's called? So they were doing that. And that was just such a different organizational behavior that  
**WLADAWSKY-  
BERGER:** came down. And to this day, Detroit just hasn't been able to catch up with it. On a different way, on a look at-- I think the innovation, the VC kind of innovation air in the US, Silicon Valley and especially is just incredible in the way it energizes people to want to do new things.

And again, as you know, this has changed. But I in the '90s, everybody would say, boy, Indians are incredibly innovative. They just all had to come to Silicon Valley to do that because the environment, the overall leadership, everything was very encouraging of innovation. Whereas in India, the bureaucracy was just stifling that innovation. I think, obviously, there's been a number of changes, so that started to change.

But leadership is absolutely critical. And in fact, without-- if a company has top leaders who think this is bullshit, it will get communicated. It will just get communicated. I don't know how else to say it. You can smell whether people really mean it or not. And if they don't mean it, you can say whatever you want to, and it's not going to happen. You really have to live it. And then it gets back to-- and if your middle managers are going to be the key vehicle to communicate the culture, you better pick middle managers very carefully so they can communicate the culture. Please?

**AUDIENCE:** I think a lot of companies have two separate tracks in technology companies technical track and management track. And they seem to be giving this impression to-- it's very difficult for somebody who's a smart engineer, and they put them up almost on the technical track to switch and have this mindset that you have to have an MBA and do other things and other. You're not suitable for the business. Is that in our organizations doing the wrong thing there by not having this cross-pollination?

Even IBM has this IBM Research. And there are divisions. For example, sales as everybody is very familiar with the business track R&D or operations might be. Everybody knows what you need to do for the technical track. But nobody has any clue how to guide you or do anything in the business track. You almost have to--

**IRVING** No, no, I understand.

**WLADAWSKY-  
BERGER:**

**AUDIENCE:** --and go back in again to go on with other things.

**IRVING** Yeah. No, that's an excellent question. Let me tell you my feelings, my experience. And obviously, let me start  
**WLADAWSKY-  
BERGER:** with my experience with IBM. In the old days, executive resource planning was just management tracks. And there were you identify which people are likely to go up the line. And going up the line was equated with managing more responsibility, managing more people. And that was executive resource planning.

Now, technical people could be part of executive resource planning. So it wasn't that only applies to salespeople, or you could have technical people there. But then what we started to notice is that-- first of all, there were quite a few technical people who were superb, but they just were not good at the nitty-gritty of management because the kind of attention to detail or the kind of-- remember, when you're a manager, especially if you're a general manager, and some job shows up, you cannot say, well, I don't like to do that. You don't have a choice.

If you say, I want to pick the kinds of things I do, the answer should be, well, I hope you're really good, and you are on a technical track, because, there, if you're good and you're in a technical track, you have choice of picking what you do and what you don't do. If you're on a management track, general management means if there is crap to be done, you'll do it. And you do it. If you're a really good general manager, you'll find somebody else who will do it for you, whether they report to you or not. But you don't have a choice. Those are different personality types, let alone just the ability to be a good people manager.

Often, people were superb technically, just lousy people managers. So that's how we invented the technical track, because it was a pity to not be able to promote technical people who were incredibly good. And we needed them more and more because they didn't have general management skills. And we had enough people with general management skills. So the technical track was born that way. And people were comfortable that they got promotions to senior technical staff member, to distinguished engineer, and then very few of them to fellows. So that's how they were born.

And I think, in today's world, I think that there are more porous, partly because, at the same time that the organization is disaggregating and becoming more virtual, just pure management is less important. I mean, you need some people-- budgets, and sexual harassment. Don't forget. I mean, remember, most IBM fellas don't like to deal with sexual harassment issues that may have happened.

But I don't need to tell you, if you are a manager and somebody who works for you did something they shouldn't have done, everything has to stop, and you have to take care of that. Or else, it will absolutely blow up in the organization, especially if it blows up externally. But if you're a general manager, you know that. And you know you have to do that. But if you don't want to do that, you have a different track.

But with virtual organization, with more distributed organizations, I think leadership is more important. And you can be on a technical track and be a superb technical leader along these dimensions, just superb technical leader. And you can be a leader of a virtual community of people who worry about virtualization or collaborative networks, whatever. But you don't want any of them working for you. You don't want to, but you can be a superb leader of that. And in the hierarchy, it's a little bit less important.

So I think it's changing and more porous. But the two tracks, I believe, was a response. If you look at, in the US, the classic organization men and so on was just one track. Your aspiration is to manage as many people as possible. That was your aspiration. And if you had to move from Boston to North Dakota to wherever to go open the organization, you just did it. And if your wife didn't like it, and your kids were in school, and pulling teenagers out of high school is not a good idea, it's like, hey, the organization needs you. And we live in a very different world and dual careers and everything else.

So I think these are all things that are changing and causing a lot of agitation in many companies. How do you handle today's environment, where the classic hierarchy and the classic upward mobility are not what they used to be? Do you see that in the organizations you have all been working on, these similar tensions?

So are there limitations to the charismatic leader? Tushman and Nadler make a very good case why the charismatic leader has limitations. And the key limitations is, often, being a great charismatic leader in these areas may-- you may not be very good at execution at all.

So you may get everybody turned on. Let's do something. And when they show up and they say, great, I'm ready to go, they'll keep telling you how wonderful it is, what you're going to do. And you say, I know. It's wonderful. I'm signed up. That's ready to go. And they say, well, it's wonderful. Shut up. What should I do? And they may not be very good at these dimensions.

And that's why they introduce a very, very important leadership element, which is people who are very good at organization-- that is, people who are very good at not just articulating a vision, but they may actually not be great at articulating a vision. They may be great at taking a vision that the charismatic leader has articulated it and organizing its execution-- how to put a structure, how to establish processes, how to manage people with rewards and punishments.

And the bottom line is, especially in complex disruptive innovations, you need a mixture of the two. And they usually are not found in one person. They usually are not. Usually, you find that as people are going up the management ranks, they self-select whether they'll be more in one style and more superb operational executive, or whether they'll be more on the visionary, charismatic leader side.

Now, what is critical is you have to know which you are and which you are not, because if you know and if you have a very good view of yourself, you will hire a COO or somebody else. Or if you're a general manager, you'll handle a VP or somebody to make up for those things you are not great at. And it's totally fine. You don't have to do all the things you don't enjoy doing, as long as they get done.

I've given the example, I think, before that with Lou Gerstner, who he just-- especially when he first came to IBM, he had to spend a lot of time in being a very visionary leader because the company was almost dying. But at the same time, we had to take out \$7 billion in cost and expense from the budget because cash was running out. And he hired the most anal son of a bitch CFO imaginable, Jerry York, who, as I told you, counted paperclips.

And Jerry York has been working in the automotive. He came from Chrysler. And he went back. And he's been one of the Raiders. I forget. He's been very active. No, no, but that's perfect. So you need to balance with somebody who is doing the operational work while you're doing the visionary work. And sometimes the CEO is more operational, and then they have other people who are more the organizational leaders. It can go in any way.

But it's very important at all levels-- let me say, middle management, where you start managing more and more people. And to do this well, one of the things that's very important is your self-knowledge of what you're good at. This is really important. You have to look inside yourself.

And this comes from experience because you don't know until you start doing this stuff what you like doing and what you're good at. And you have to decide more or less which kinds of jobs you're going to take on for yourself, and then hire people who complement your weaknesses.

And then, as long as the whole organization is very strong in these multiple dimensions, you're totally fine. But you really need to know that. And it's not that easy to be-- especially, as you rise up in the organization, sometimes people lose their head and think, well, I'm good at everything. And that's where you say, well, not usually.

And then there are these things. And let me move on to the next paper. Any questions on what we've been talking about on leadership? Yes?

**AUDIENCE:** It's funny that those two descriptions are that that's the job description for commanding officer and executive officer. The commanding officer does huge his responsibilities in any unit. And then the executive officer has the elements, the structure, the discipline.

**IRVING  
WLADAWSKY-  
BERGER:** So the commanding officer is supposed to--

**AUDIENCE:** Establish the vision, empower everybody, and get resources.

**IRVING  
WLADAWSKY-  
BERGER:** How big is a unit typically?

**AUDIENCE:** So the units grow. So you start out, if you're a junior guy, a unit maybe 17 people, and you're on XO. And then a CO is slightly senior. But it's only 17 people. But as you get more senior, then the size of the units grow.

**IRVING  
WLADAWSKY-  
BERGER:** And do people go back and forth between being CO and XO? Or is there a personality affinity?

**AUDIENCE:** It depends. Some people never get to CO. They make it up to XO, but they never get to CO. Usually, if they get the CO and they're really good, they never get XO again. They always are COs or something. But some XOs grow to be COs. Some of them don't.

**IRVING  
WLADAWSKY-  
BERGER:** Very interesting. And any other?

**AUDIENCE:** So I was going to mention that Stone follows a leadership model, which includes four things. There's visioning. There's inventing, sense making, and relating. So what you're covering here is probably visioning and relating, not much of sense making and inventing. So at the highest level, so what you're proposing is that inventing happens.

**IRVING  
WLADAWSKY-  
BERGER:** Well, I'm not proposing. Remember, we're discussing Tushman and Nadler's paper, which-- and remember, these are different models of how to look at organizations. I don't know. So here, you have a comment?

**AUDIENCE:** I think your question is geared towards that inventing, and engineering, and sense making, et cetera. I think what you mentioned before about the difference, I think, because now you're talking about the engineering side, whereas Irving's talking about more of a leadership of how to manage the change and how to encourage change.

But my point is that so when you talk about gatekeeper and research, I think that was focused on the communication aspect of the R&D organization. Whereas I think always talking about more of a company-level change. And my comment and question maybe is I see that more and more companies, at least in Korea, in Samsung, and LG, and all these high-tech companies, and some biotech companies in Korea, they are hiring. And they are pushing these people from more engineering and science, and they push them to become a senior management.

**IRVING WLADAWSKY-BERGER:** Yeah. Well, as you know, I'm a very strong advocate for that. I hope I've said it in this course once or twice.

**AUDIENCE:** But my point is that the leaders who actually are supposed to be in this kind of situation where they have to not only sense and detect the change in technological market and changes also have to execute and embrace that change. So these but these are two different kinds of--

**IRVING WLADAWSKY-BERGER:** No, no, no, I understand. I agree totally. Yeah, yeah, yeah, yeah, yeah. I view this as consistent with my view of this, which is you need to step back and look at organizational problems as complex systems problem to be solved. And the fact that they involve people and tasks, that's OK. It's a problem to be solved. And the reason you often want people with good engineering backgrounds is because what you hope you learn in engineering backgrounds is the disciplines of, how do you approach a complex problem? How do you structure it, take it apart, put it back together?

And my view of an engineer is it would be a really bad engineer who said, here is the answer. And I look at it. And I say, but this building will fall. And they say, well, you didn't tell me you wanted a building that can actually be built.

So my view is when you give me an organizational design, it's got to be one that you yourself are very comfortable executing. So this linkage between design and execution, between strategy formulation and strategy execution, I consider that critical. And often, I think in classic business worlds, those two-- consultants often give advice that they don't have to execute. And I just find that suspect. I don't say there is no role for that. I just find that suspect compared to, here is a problem. Let me know what to do. And when you come back with a great answer, I say, thank you. You're now general manager of that unit. . Go make it happen.

And I think that's what my feeling is. That's why people are looking for those skills more. Whereas in the US and I'm not sure about the UK, there's still been too much of a viewing of, well, at the top, you want financial people who can count money. But you can always hire those people. And computers are really good at counting. So that's a big cultural thing.

Whereas no question, Japan, I think, also has a lot more people who come up through technical ranks. The continent in Europe has a lot more. The US has always been the one that's been most-- I don't know if it's criticized or praise, depending on whether you are an MBA from Harvard or an engineer from MIT or Stanford for promoting primarily people with pure MBA skills, not enough technical skills. I mean, take that, and then I'll come back to you.

**AUDIENCE:** I was just going to say that I recently read an article about Parsons--

**IRVING** At Time Warner. Yeah. He announced his retirement, right? He'll retire. I'm sorry?

**WLADAWSKY-  
BERGER:**

**AUDIENCE:** In December.

**IRVING** Oh, in December. I thought it was early next year.

**WLADAWSKY-  
BERGER:**

**AUDIENCE:** So he claimed that he would go. He stated that his form of leadership is actually getting down in the trenches with the troops. So by getting to know who he's dealing with, whereas he's not divorced from that level. And so I think that's an interesting model for you because you need to understand how to actually empower them to the next level.

**IRVING** Yeah. He's supposed to be a really good people manager. And my feeling is one of the reasons he was made CEO is, remember, at the time when Levine was forced out, there were huge battles between the Time Warner and AOL side of Time Warner, but huge. I mean, the Time Warner people were really upset at what happened to them when they acquired AOL. And I think Parsons was very good at calming everybody down and doing the job. And he was very good at that.

Prince from Citibank is an example. He's a lawyer. And I think when he was named CEO, the key thing they were worried about was corporate malfeasance. There were all these scandals having a lawyer at the top. And sometimes a great lawyer is also a great business strategist and so on. And sometimes a great lawyer is not a great business strategist. So often, it happens that an organization picks a leader.

And remember, this is fractal in the sense that we're not just talking at the CEO level, but throughout the organization. You pick a leader who is the right leader for this environment. And the environment changes. And if you keep that leader there longer than you should, they may just start screwing up because they are not good at this new environment.

And now, if you're a really, really good leader and you really understand yourself, you will be also good at that environment because you'll change people under you. But that's when you get into, well, they are loyal. They want to keep the people. Well, you're a loyal leader and whatever, loyalty is OK. But you don't want to kill the business with loyalty. Yes?

**AUDIENCE:** Oh, yeah, just a comment. For most senior management in China, they are from engineering schools, from Tsinghua. And even under the previous Chinese President also from engineering school. So far, there are no governors of wherever the top level in China is from no school or MBA. And actually, I read article in China talking about this kind of situation.

**IRVING** And what do they say? What's the view?

**WLADAWSKY-  
BERGER:**

**AUDIENCE:** Right. Their comments is like, in China, in countries are still under development like China. So perhaps like people with engineering background, it's more popular. But once the countries get more mature and more developed than the lawyers or MBAs, these kind of people were kicking their point of view.

**IRVING** And the question is, why? Why, when things become a certain point, engineers are no longer as good? And the  
**WLADAWSKY-** answer often is, well, I don't know, because they're not articulate. They don't lead with the right fork and knife.  
**BERGER:** But now the question is, can you have engineers who are incredibly charming? Of course, you can. That hasn't been the culture. Yes, please?

**AUDIENCE:** A lot of the leadership discussion we've had last few minutes has assumed that to deliver value, you need an organization, and you need a formal structure with selection happening from the top. So as you pick who your leaders are, it's not a democracy. It's not that the employees get to pick who the next year. Do you think there's any difference if you. If the world moves more towards open-source foundations or partnerships?

**IRVING** Let me tell you what I think. I think that we are moving from it's all top-down to you meet in the middle, because,  
**WLADAWSKY-** remember, you meet in the middle. My model is-- and we talked about a little bit before-- that the way a lot of  
**BERGER:** new ideas first get shaped up-- and this is very important to why they often come from more junior people or whatever-- is in this organic way-- through communities, within the business, from outside the business. And they rise up, and they get shaped up.

But remember, at some point, if you want to bring them to market, you need to organize. You need finance. You need all this stuff. And no business is going to say, well, let your community pick their leader to be the general manager. That's not how things work. I mean, people may do that at an experiment.

But at some point, the organic group has to meet the organization, which gives them money, and power, and so on. And that's why the organization is really important. And in fact, one question I've been asking myself is, what's almost the minimum amount that you need at the hierarchical level? I think you, for sure, need finance. You need HR. Remember, you can say, well, we don't like all this HR stuff. You don't have a choice. You just don't have a choice. Otherwise, you get in trouble. So I find finding a balance to be very important.

**AUDIENCE:** How would that translate to open-source community?

**IRVING** Well, because the open-source is the organic, and it's self-organizing within itself. But let's say, when IBM said  
**WLADAWSKY-** we'll have Linux and we'll do that, we put a general manager in place to go bring Linux to market and get money  
**BERGER:** and do marketing. Remember, the ads that you saw the Linux ad Griswold showed us cost a lot of money to do those. Trust me. Those were really expensive ads. So that's when the organization comes in.

But the ideas, the development, and a lot of this stuff continued in open source. The bringing to market and supporting continued more hierarchical. Yes, please?

**AUDIENCE:** So one question was, in the US, most of the CEOs are moved from industry to industry, and they run the company by the numbers. For example, Nardelli started from GE and now Chrysler. So how important is it for the CEO to know the well business of the company?

**IRVING WLADAWSKY-BERGER:** I can only give you my personal opinion, which is I think it's very important. But then you have Lou Gerstner, a very good example of somebody who I think was a superb CEO and not a computer expert. I could be dead wrong here, so I don't think there is one view.

By the way, even when somebody said this Sloan view, I don't think there is-- to be honest, I suspect it's that. Places like MIT, still, it's like organizing cats. Every faculty member will have their own view of what's important. There is no MIT view of anything. So that was more a view.

And maybe it depends, and it depends on the cycle. Maybe, at the time, let's say, Lou was needed, you had a broken company. So you needed somebody that whose number-one quality was, how do you fix a broken company? And it's not that he had a great skill in broken companies, but he turned out to be excellent at that.

Whereas if you have a healthier company and you're trying to move it into the next levels, you probably want people who have more in-depth expertise of the markets and the product to move it. So maybe it depends on what's the environment in which the company finds itself today. Maybe that's what it is.

**AUDIENCE:** Is it the US phenomena, because in India and Japan, mostly the leaders come from within the organization.

**IRVING WLADAWSKY-BERGER:** Well, in the US, they used to a lot more. That's a change here. And I wouldn't be surprised if you saw that change. How about in China, the leaders of companies, do they come from the organizations or-- they often come from the party or--

**AUDIENCE:** Yeah, it depends. If a state owned companies like Chinese government owned companies, most of them are promoted inside the organization.

**IRVING WLADAWSKY-BERGER:** Inside?

**AUDIENCE:** Right.

**IRVING WLADAWSKY-BERGER:** People don't often take somebody who is from the party and put them in charge of the organization of state owned?

**AUDIENCE:** That happens too, but not that often. But compared to the US company in China the people-- I mean, I would say, most of them are, from outside.

**IRVING WLADAWSKY-BERGER:** Outside?

**AUDIENCE:** Right.

**IRVING WLADAWSKY-BERGER:** Yeah. Obviously, there is no agreement as to what is right. I think people keep experimenting, and the cycles keep changing. And you try this. And the reality is there is no well-established view. So it all depends. And that's totally reasonable. It's a very complex subject. And it all depends.

Why don't we take 10 minutes, and then we'll quickly go over Rebecca Henderson's paper? And then we'll talk about IBM and organization. Let me show the--

**AUDIENCE:** It's in the Student Center.

**IRVING WLADAWSKY-BERGER:** --quickly. She was asking the question whether having good management is really important for a company. Or is it just one of those myths that you don't need good management, but anything works? And her conclusion was that having really good managers really made a difference in the company. That was part of her study and, in particular, because really good managers can handle the really complex parts of an organization.

And in this example, in the pharmaceutical company, the complex parts is, how can you simultaneously become very deep with the knowledge you need to do new pharmaceuticals or whatever? And if you don't have depth, you just won't be world class. But of course, as we've discussed several times, often that same depth can become an anchor that makes it difficult to move into the future because you have to do that. So then how can you, on the other hand, have the skills to embrace change and move with change?

And handling these contradictory goals is what differentiates good management from not-such-good management. In fact, as we were talking, was giving me another example of this whole principle of handling contradictory goals. If you are an organization and your expenses are too high compared to your revenues, you have to lay off people.

But if you lay off people, you may get rid of skills that you want later, or it may make it harder for you to attract good people later when you need the good people, because they'll say, well, I don't want to work for you. You will keep me and then get rid of me. But if you don't lay them off, you can meet payroll.

So that's another example of, how do you balance what looks like contradictory objectives of an organization? And we've talked about quite a few. Do you pick CEOs or do you pick leaders of an organization with really good financial skills versus engineering skills?

And the higher up that you rise in an organization-- and this is true, by the way, whether we're talking management track or technical track, because technical decisions require the same ambidextrous ability or multi-dimensional optimization ability. The more your key jobs are to handle these really difficult problems for which there is no one answer, that's where really good management comes to the fore.

And then Henderson had listed a set of very important qualities of good management in the pharmaceutical industry, which you can comment since you come from that industry whether they are correct or not. But number one, I agree absolutely, is higher the best possible people. And I mean, it's been said, and it's true. People who are not good managers, good leaders, surround themselves with less good people because, often, part of not being a good manager is you don't feel confident enough in your own skills.

And you can surround yourself with people who will say, oh, God, you are beautiful and brilliant. And there's nobody better. And you don't want that. Whereas good people tend to be very tough. So hiring the best possible people in the pharmaceutical industries, she cites statistics that the research efforts of the most successful pharmaceutical companies can be as much as 40% more productive, which means they do-- and, remember, research is a critical part of the pharmaceutical company, which means that the really good companies do a much better job.

And a way that they do a very good job is that the really good managers keep challenging and asking questions. They just keep always finding out why is it being done that way, et cetera. And the really good managers of the successful companies are very comfortable-- this gets back to organic assimilation of knowledge-- getting great ideas from wherever they are out there and integrating back into their organization. So I couldn't agree more with Rebecca Henderson on these points.

And here are also some very good points about successful pharmaceutical companies. And I think we've talked quite a bit about this, keeping abreast of changes, allocating resources, and then, extremely important, managing tensions in the organization. And again, to the comments I was making before about, quote/unquote, "politics" and the fact that in my experience, a lot of times, very good technical people don't like to get involved in politics, you cannot have an organization that is making tough decisions without tension. And in fact, one of the most important jobs of really good managers is, how do you manage those tensions?

And when do you have to decide, Irving, you used to be really great, but you're a pain in the ass now? So goodbye. And when do you need to get three people together that cannot get along? And you have to knock heads and say, I'm going to close the door. You guys work it out. And then I want to see the white smoke. And then I'll come in, and we'll go ahead and do that.

And really good managers do this well. By the way, Parsons is supposed to have been really excellent at that, how to get people and get them to work together well and get into to facilitate. And different people have different styles. Some people do it because of fear of God. And their dominant personalities make it very difficult to disagree with them.

And other people do it very, very differently. But I cannot just say enough about the importance of knowing how to manage tension in an organization because they are going to come up. And the more you're trying to do disruptive things, the more tensions are going to be there. Yes? Please?

**AUDIENCE:**

Some tensions that I've seen happens because of different personality types and, also, situational class. And as leaders and managers, you can deal with the first aspect, which is very difficult to understand. And I think this couple people from this class, they use. In ISDS and professors from Harvard.

So what he's teaching is how to understand yourself as a leader, what qualities you have. What are the things that you don't have with your orientation? And then also try to understand your team or try to understand other personalities. And then try to bridge the gap. Here's this situation gap. Bridge the personality. If you don't know the other person, it's very what it is.

**IRVING WLADAWSKY-BERGER:** No, that's right. That's right. Well, again, really good managers-- let me say it a different way. People with good leadership qualities-- often, they are very good at reading people and at understanding what makes you tick. And then if you're good at reading people, it's just easier to work with them. You'll understand what makes them happy. You'll understand what makes them unhappy. And you'll make those decisions. So I agree totally that the ability to understand personalities-- and again, those are skills that you can only learn by doing. I don't know what I can tell anybody on how to do that, other than encourage you all to do that.

Jack Welch-- I think in the GE, as you know, is famous for their management executive schools. And GE used to-- I don't know if they still do. But I remember, years ago, they had a way of looking at their managers across two dimensions. One dimension is, is this person a good manager in making their numbers? Or are they a bad manager in making those numbers?

And the other dimension is, is this person a good team player or a bad team player? Well, if you're a bad team player and you don't make your numbers, that's a trivial case that you get rid of that. And at the same time, if you are a great team player and you are a good operational manager making your numbers, of course, you want that very much. The extremes here are the obvious ones.

But Welch used to say that if you didn't make your numbers, but you were a very good team player, he usually gave people a second or third chance to see if they can learn how to do things, because he liked that very much. And if they still didn't do it, you have to get rid of them or move them to a different job.

And if you're a very good person who keeps making their numbers, but you are a bad team player, he said, you really should get rid of those people and replace them because they will be bad for the organization. They can have such a disruptive effect on the organization that you just spend a lot of energy cleaning up after them.

Is it right? Is it wrong? I don't know. And I don't know any of you who are familiar with GE management principles, whether they continue to practice this. But that's something that-- I think it sounds quite reasonable.

**AUDIENCE:** So you were just mentioning how to survive a secret operation more generally. I've heard it said that nurses are, let's say, particularly during the downturn. The closer you are to the revenue stream, it seems, the safer your job can be, and more likely, therefore, that you would survive. In your experience, can you generalize something like that?

**IRVING WLADAWSKY-BERGER:** Well, I mean, there is no question that when things are bad, you often cut staffs because, I mean, at some level, the people who build products, manufacture products, are selling and supporting them, you need them to make the revenue. And the staffs are the people that are one level removed from that line of defense. So in that sense, that's true. You obviously need some. They just have to be very good.

So I would say that staff jobs are often more vulnerable in bad times. There is no question. There's no question. And the reasons, I think, are obvious that you need the people who are actually bringing in the revenue more than anything else.

**AUDIENCE:** So there's a distinction that those are really supporting the revenue stream.

**IRVING WLADAWSKY-BERGER:** Yeah. But let me assume, if you are supporting the revenue stream, maybe you are semi-staff. You're closer to the line of business. And that's what I would say that, in general, so--

**AUDIENCE:** So just for clarity, I want to say, when you say team player, you mean gets along with peers and higher up, or follows policy to the letter of the law?

**IRVING** No. I think it is somebody who is effective in the organization as opposed to disruptive in the organization. That's what I would say. And I'm sure you've all met people. Some people just have trouble working with other people.

**WLADAWSKY-**  
**BERGER:** And in fact, I've worked with people that are very good up and down. So they are really good hierarchically, and they are very supportive of the people who work for them. But they are real fighters with peers. And generally, those people are horrendous to work with-- I mean, just horrendous because it's almost like every discussion is a battle.

And the reason those people are bad, especially in today's world, where you want to emphasize collaborative innovation, is if you have a great idea, this is the last person you'll bring a great idea to because the first thing they'll say is, you're an idiot. Why is that?

Well, because if this had been really a great idea, I would have had it. I mean, they wouldn't say it that way, but they'll think that way. And those people are not good. But often, those people are superb at something. So you have to manage the decks. There's no perfect way. You're doing a dynamic system optimization problem. At some level, that's what you're doing.

So let me talk about, then, for the remaining 45 minutes the national and cultural issues to what we actually did with IBM's internet organization to make it come to life with this specific example. And let me talk about these five aspects that I thought were critical in building the internet organization.

First of all, we built a small virtual organization. Why is that? Well, the internet, as any strategic change, is usually going to affect the whole company. So if you said, well, we're going to put everybody who is affected under the same general manager, you're just turning around the whole organization, or only the CEO is the person you can do that to.

So instead, what we did is to set up a small virtual organization. We had in the internet organization a few hundred people at its peak. It was never bigger than that. And its job was to coordinate with everybody else in the company. That's what its job.

There were certain functions that it had to do full-time-- for example, articulate the market strategy. That was critical. You couldn't have everybody in the company saying, OK, this is what e-business means to me. This is what-- you couldn't do that. You needed to have at the level of working with people like Chris Wall and doing those kinds of IBM-wide ads and establishing the brand, it was done at the level of the virtual organization.

We also had experimental offerings, not too many. But things that were brand-new, where nobody had any idea where to put them, we did them in the internet organization. E-commerce was an example. So we had a small group doing e-commerce because in 1996, nobody knew what the hell e-commerce was. As soon as we figured it out a little more, e-commerce became essentially WebSphere commerce server. So it became a layer on top of the web application server platform. But that took a year or two before we figure out where e-commerce belonged.

Some of the early major events, like the stuff John Patrick talked about with the website for the '96 Olympics, we did in this organization because, again, there was nobody else that you could go to. So by being a small organization, you had to pick very, very carefully what were the things you were going to focus on. And those are the ones you did. And everything else, you had to rely on the rest of the organization to go do.

We also are very much told people up front that success for such a virtual organization was going out of business. Well, going out of business after what you did was done. Obviously, if you went out of business three months after you started, that would have been very bad because you needed the virtual organization to kick start the initiative to get all the parts moving. But if you were successful, it meant all the units had already started to move. All the units were already doing their job.

And at that point, you became more of a bureaucratic hindrance than a help. And usually, you overstay your welcome by, I don't know, six months to a year. I think that's what happened. But eventually, we just disbanded and went out of business. And you could see this was really effective the first two years. And then we were in business four years. The first year was really effective. And the last two years, you saw the effectiveness begin to pale because it wasn't needed. You could do this elsewhere with the other parts of the organization.

In IBM, we have retained the notion of an EBO, or Emerging Business Opportunities, which is very much a similar model. When something new comes out-- life sciences was one of them. In 2000, nobody knew what the hell was life sciences. You knew something was happening. You didn't understand its implications, what was involved. So we formed what's called an emerging business organization to do life sciences. And they did offerings. They had sales. They had marketing and so on. It eventually became clear. And life sciences became part of the health sector in IBM and so on. Please?

**AUDIENCE:** How do you specifically come up with these concepts? For example, the emerging business of life sciences.

**IRVING  
WLADAWSKY-  
BERGER:** How do you come up with the organizational concepts or with the units that you start doing EBO?

**AUDIENCE:** How do you incentivize your employees so that they will come to you?

**IRVING  
WLADAWSKY-  
BERGER:** Well, this gets back to the culture of innovation that you want people-- remember, life sciences was going out there. And you encourage people to watch the marketplace, to know that there is something called life sciences. And they are buying computers, and they're not buying our computers. Why the hell is that?

This gets back to ask questions. So I hear life sciences. Well, yeah. Well, they're buying Compaq computers. Compaq, in fact, was one of the early leaders in life sciences. HP acquired Compaq. Well, so how come they're not buying our computers? I don't know. Well, have we ever caught on somebody doing life sciences? No. Well, should we call?

You just keep asking questions. And usually, remember, initially, EBOs are small and a small number of people. So you'll usually find a small number of people who are turned on by this. Often, the people who are really good EBO leaders, Emerging Business Opportunities, come from the research environment, because people from the research environment love to do new things. And actually, it's a very good opportunity for people from the research environment to get into business management, because this is totally in the startup phase. It's identical in Silicon Valley that often the founders of companies are really good technical people.

And when it reaches a certain size, and now you have to do Sarbanes-Oxley and all this crap, the founders don't like to do that. And then you have to switch to more professional management. And the same happens here, that then you have to switch to more classic general managers to go scale.

But in this very initial phases, you need-- and by the way, in the initial phases, you absolutely need people who are really deep into, what is life sciences? What is the internet? What is Linux? What is whatever the hell else? Because they also, especially if it's something that's going out in the world that you want to join, the world has to accept you, that community in the world.

And if you show up and say, I'm from IBM, I want to do life sciences, and they say, well, what's biology? You say, well, I took a course in high school. That's not a good answer. So you have to really sound like you know what the hell life sciences was. And the person we appointed was a very good executive from our research labs. And she had a PhD in computational chemistry, or biology, or something like that that was relevant.

But it's part of creating the culture of innovation. It's the same thing. If you ask me, why do people contribute things to open-source communities? Because you don't get paid anything. That's as if I ask you, why do you submit papers to a journal? Because when a journal publishes your paper, they don't pay you anything.

But the answer is, this is incredible prestige when an idea that you submitted, let's say, to the Linux community gets accepted and becomes part of the next version of Linux. Your peers will find out, the people you're working with. And by having your ideas become part of the next version of Linux, that's how you go up in the eyes of the community.

And similarly, if you had an idea and you were able to create an EBO out of the idea, your respect within the community will go way up. And I honestly think this whole ego and respect are just huge drivers for the kind of people we're talking about who come up with ideas. I don't think I need to say too much to you all about that.

And what's then important is that within your company, you create a culture where everybody knows that, where you give them awards, and you have corporate recognition awards, and you give out a lot of money, and you become a distinguished engineer or whatever. You have to work at this, is what I'm saying, to create a culture in which people feel such pride that they will very much want to do that.

I'm assuming the same is true in the armed forces, isn't it, that the respect of the peers, when you do something, you get medals or-- I don't remember what it's called. I've been in a few places where people, out of respect gave me a coin. So there's a whole set of things that are really positive to get. And I'm assuming that drives a lot of behavior, correct?

**AUDIENCE:** Yeah, because you don't get money.

**IRVING** Yeah. Right. OK. Please?

**WLADAWSKY-  
BERGER:**

**AUDIENCE:** Bring a new product development, it's probably easier to incentivize your employees. But if you are outsourcing the manufacturing plant to China, it might be good for the organization. But how do you incentivize your employees?

**IRVING** Well, because usually what happens is the manager who is leading the charge to outsource is told, we're not  
**WLADAWSKY-  
BERGER:** competitive. How do we become more competitive? And one of their choices is to outsource. So the manager of the unit that has made the decision to outsource and is establishing the organization that is doing the outsourcing-- it's part of his or her job to make that decision because, otherwise, they'll get fired. They're just not making the numbers. That would be the reason you outsource.

Now, obviously, you go down into the organization. People whose jobs are getting outsourced, I don't know if there is any way you're going to make them happy with that. Hopefully you can have other jobs for them. And if you can, they'll be fine.

**AUDIENCE:** A lot of times, the jobs don't blow in, but you probably work with a partner from outside the company.

**IRVING** That often works very well. But often, different people have those skills. Often, being very good at more partner  
**WLADAWSKY-  
BERGER:** relations, business development relations, is a different skill than doing it yourself. Some people can make the transition. Other people cannot make the transition. So it depends whether you can make the transition or not.

**AUDIENCE:** And the virtual organization probably also extends to your partner organization.

**IRVING** Totally. Yes. And I would say, in today's world of increasingly distributed organizations, the skills to-- remember,  
**WLADAWSKY-  
BERGER:** before, I said, being a good team player, and then we clarified, it means that you are very good at working with an organization.

That is even more critical today because, often, the people that you have to be very good at working with are not working in the business. Not only don't they work with you, they don't even work for the organization. They are partners, suppliers. And really good leaders of this more virtual organizational world-- they are very comfortable working with things, no matter whether you work for them or not.

And you see, it becomes very interesting. For example, in an EBO-- let's take the internet division-- I was held totally accountable for the success of the internet division. I had measurements, and how many new clients we were getting.

Now, if I came back and said, well, look, I mean, this is unfair what you're asking me to do. These people don't report to me. First of all, that would be a stupid comment. I mean, that's a very good way of saying, and, therefore, I'm leaving.

[LAUGHTER]

That should be your next phrase if you come out with a phrase like that. But it's very important-- and this becomes part of the organization-- to remind people that when you hold someone accountable for something, you hold them accountable not because the people who are going to execute report to them. That's their job. They are accountable. And if they are very good, they'll work across the organization. But as I'm talking, I suspect you're all familiar with the notion of P&G brand managers.

And am I not correct that in P&G, the brand manager is a virtual organization of very few people, but they really manage Tide, or Crest, or whatever, and they have to be very good at working with manufacturing, and marketing, and everything else. So this is almost like this extension of the notion of brand management for new innovations. That's really what this concept-- does P&G still have brand management in the same way? Yes? And it's still considered a great thing?

**AUDIENCE:** Yeah.

**IRVING WLADAWSKY-BERGER:** Now, another critical part is if you're going to manage a virtual organization, don't make enemies. Don't go out of your way antagonizing people because, remember, they don't work for you. And if you're a jerk, well, you just won't survive. And the people that you may antagonize, the people you need to do something are people who are bringing billions in revenue. And you have to remember you may have a great job, and you're talking to the chairman and all that. These people are bringing billions in revenue.

At some point, there is a choice of whom to throw out the window. I don't need to continue. So one of the things that is very important if you are going to manage virtually is to be able to be as inclusive about as much of the organization as possible. And that means that even as you are putting-- this is the part where you have to think like a problem solver.

So if I want anchor to be part of the field, this is part of the unit, whatever and anchor is doing God knows what else is, think hard. How can this be part of the strategy? How can I do something so that all of a sudden, instead of anchor thinking what I'm doing is competitive, he'll think, oh, my God, what Irving is doing could be putting pixie dust on my product and rejuvenating it and making me work forward? Now, you can say, well, you're being political.

I don't know. We can call it whatever we want to call it. But if you need as much of the organization to feel ownership in this initiative and to do things for you because they have the money, they have the people, they have the talent, they have the skills, if what you are doing is constantly going to the CEO or some other senior executives and complaining that your peers are horrendous to you, let me tell you, you'll be gone very quickly. I mean, whining is not a-- whining is whining. I don't know how else to say it. And the higher up you go in the organization, the less cute whining gets, because the view, correctly so, is I thought that's your goddamn job.

And let me give an example. One of the things that-- as you know, mainframes, once they got through the transition, have continued to be a huge source of revenue for IBM. It's not the gross product. It's more the legacy product.

Legacy often means cash. And cash is not bad because you need cash to fund new initiatives. I mean, you also need cash to do payroll and things like that. But it's cash that funds new initiatives.

And every quarter, if you read a lot about IBM's fortunes, people look a lot about how the mainframes-- how are they doing? Because when mainframes have good quarters, IBM generally does well. When mainframes do not, sometimes other things can come in and make up for it, but it becomes tougher.

Well, one of the things that became clear with the internet is that the internet was incredibly positive for mainframes because the backend systems that were providing information and applications to people with browsers were usually mainframes. That is, FedEx runs their package tracking applications on mainframes. I think they still do, but they did them, for sure. And UPS does, for sure.

When the internet came in, one of the most wonderful applications was the ability to track your package online. And you put a small web server in front of the mainframe. And so that generated a lot more traffic to the mainframes because now people, through their browsers, were generating transactions. That had the very healthy effect that here were all these units in IBM that were so responsible for revenue, loving the business and feeling very included. I cannot tell you how much easier it is to do a new initiative if you have the units that are very operational with you than if you don't have them.

There are times when you have a competitive situation. Your new unit could hurt an existing unit. And you just have to think very hard. I mean, these organizational issues are just part of managing. You have to think about it.

And thinking about it doesn't mean if you have to fight if you need the resource. You do what you need to do. But you're solving a problem. You have to do it in a very careful way, as opposed to say, look, Lou said, that's what I'm doing. You never do that. That is such a sign of weakness that you just never do that.

Now, one of the ways to convince people that your strategy is real is when they read it in the papers or when they see ads about it in NFL games or whatever. And obviously, to do that, you need the support of top management. It's not very good for top management to hear a new thing that's in the papers, very prominent. Hey, what the hell is that? Well, Irving had lunch with some reporter. Doesn't sound very good.

But assuming, as we discussed before, things are easier. It's a small number of people at the top usually get into trouble at the next levels down in middle management. And if you try to go sell what you're doing one middle management at a time, you'll get eaten up alive. First, that's how you're wasting your time. You're spending your time. There are lots of reasons they won't like it.

So once you secure support at the top, it's very important to be out in the marketplace, give interviews, talk to the press, encourage your CEO to talk to the press about the things you're doing because when people read it, you can go give-- you can go have an internal meeting and give a talk. People will say, that Irving is a jerk. They read the same thing in *The New York Times*. And all of a sudden, they say, holy shit, look what's in *The Times*. They're talking about Linux. That IBM is a big force in Linux.

And it tells the world you're out there. It tells the world you are for real and that this is very important. And of course, given that this becomes part of your organizational plan-- remember, we're managing organization, and we're being-- the term "Machiavellian" could be used, but you're being a good problem solver. You're trying to get the whole organization to know this stuff is for real. So when you get *The New York Times* article, make sure every goddamn person sees it. Make sure everybody knows it's there.

And if you can get the CEO quoted in the article, and if you can get top executives to give interviews, it's very hard for people-- I mean, if, at the top, people don't like what you're doing, they will not want to do the interview. But if they do the interview, it would be considered really bad manners to say, Irving, oh, God. He's an idiot. People just don't do that.

So you're almost forcing them to say good things about your initiative by-- I'm being very serious-- by including them in your interviews or in your external events. Sometimes this is almost the principle invite your enemies into your tent, for all crass reasons you want them in your tent.

And you're keeping an eye on them. Feed them good lamb and rice, and feed them well inside your tent. This is all a very sophisticated game and playing it outside-in. Remember, we're talking about disruptive innovation. If it's just an incremental thing, if a product announcement, that's not what we're talking about.

Now, in every disruptive initiative that I have been involved in at IBM, The hardest people to convince were our own people internally. And I'm being very serious. The depressed financial analyst, IT analysts, the customers-- they are much more willing to give you an audience to listen to new ideas. They may or may not like what you have. But they have nothing to lose if you come up with a new idea.

Your people within the company are often the most cynical about something new within the company. And often, it's because they don't even know what the hell you're doing because they are busy doing their jobs. And in the meantime, you have circus and all this stuff. And they say, well, I'm working my ass off. He's wasting all this money that if only I got it, it would make my job easier. Yes, please?

**AUDIENCE:** Is what you're saying true even in the context of what you said before, around being inclusive of the org and tying other people's goals?

**IRVING WLADAWSKY-BERGER:** Well, because the two go together, you want to be working outside without asking for permission, but you don't want to ignore the people inside.

**AUDIENCE:** What I meant was--

**IRVING WLADAWSKY-BERGER:** No, no, the inclusive.

**IRVING WLADAWSKY-BERGER:**

**AUDIENCE:** Right.

**IRVING WLADAWSKY-BERGER:** Yeah, well--

**IRVING WLADAWSKY-BERGER:**

**AUDIENCE:** So even having done this, were the people inside still the hardest to convince?

**IRVING WLADAWSKY-BERGER:** Yes, because, often, when you're being inclusive at this level, you're talking about a certain level of senior and middle managers that you need to support you. Whereas I would say, when I'm talking about internal communications, I mean everybody. That would be the difference I would make. You really need the management at that level with senior.

And most of the people at the senior and middle manager-- by the time they got there, they know be very careful about being openly against something that has obviously top support. they may not help you too much until you convince them that there is a lot in it for them. But they'll be careful not to hurt you, because then they get a reputation for being bad team players. And that's not a good reputation to have in many companies. In the old IBM, that was almost a team sport to be-- which was part of the dysfunctional-- partly why the company got into such trouble.

But here, I mean that you need-- if you have a saleswoman selling to banks in Thailand, you want them to know what the business is about. That's really what I mean. You want to get to all the reaches of the company, and make sure that they are educated in however way you can. You want to reach them and say, well, Thailand? I mean, trust me. You need them because you need them to start getting on the learning curve. If you really want to be successful, you need to start getting everybody to know what it is you're talking about.

Remember, again, we're talking about disruptive innovations. You're trying to create a new initiative, a new order, a new way of doing things. And so you need them to understand this. And there are many ways of doing that. Most companies used to-- I don't know if they still do that-- have kick-off sales meetings at the beginning of the year. I don't know if that still happens in IBM. There's so much being done virtually. Somehow you want your ideas everywhere.

So when you are starting off, two of your most important teams are external marketing and communications and internal marketing and communications because they are the ones that spread the word externally and internally, respectively, of what it is that you're doing.

Also, don't underestimate that by trying to convince people of what you're doing and explain it, you're showing them respect. And when you're showing people respect, they respond far more positively than when you say, well, I don't need you right now. I only need the managing director of JPMorgan and Morgan Stanley, the people who sell to them. That is not a good idea. You really want to embrace and get down because you never know when you're going to need them.

And then the final thing I would say is, at the beginning, you need a legion of core supporters-- and people often call them evangelists-- of people who've drunk the Kool-Aid who not only do they believe this new thing you're doing, but they are passionate about it. And remember, these are the people that you say, there is a sales meeting in Thailand, and I need you to go there and explain to them the business. And they'll say, perfect. I'll get on a plane. I'm off to Thailand.

And you want to nurture those people. And usually, when you're doing a new initiative, hopefully something that's exciting-- and this is true whether we're talking about Web 2.0, virtual world, Linux. There's going to be just a small number of people that are just love this stuff. And somehow, you want to make them special and very much part of your team and use them to spread the word because, remember, in the early days of a new initiative-- Chris Wall mentioned this last week-- you're selling faith because you don't have anything else.

You're working on other things, but they don't exist. So what you're really selling is faith that if people come along with you, if it's the clients, if they do prototypes and stuff with you, if it's inside the organization, if they start embracing this in their products, it's going to be much better for everybody.

And I guess you can try to sell faith by numbers. But again, as Chris said, that just doesn't work very well. So that's probably why the term "evangelist" came into being for the people who go around convincing you of new initiatives, because you're trying to sell faith that something profoundly important is happening. And they want to be a part of it. And it's really great for them, and join the party, and on, and on, and on, and on. So these are some of the things that we did in this organization, cultural issues for the internet organization.

And notice this is very different from running a line operations. Really different. Line operations, you have things to sell. You have sales quotas. You have manufacturing or development, depending on hardware or software. So you just have a more almost classic structure. Whereas at the start of phase, the objectives are just very different. How do you get going? Questions, comments? Please?

**AUDIENCE:** So I guess it is possible to get buy-in from top management.

**IRVING** For sure.

**WLADAWSKY-  
BERGER:**

**AUDIENCE:** When you actually physically say it or not, you can walk into someone's office. They knew that.

**IRVING** No, that's right. In fact, I think I may have said it in other meetings. If you're doing a strategic, disruptive

**WLADAWSKY-  
BERGER:** innovation, I don't think you can do it if the top management against it. I just don't think you can do it.

**AUDIENCE:** Well, not even against it. It's just they've empowered you to do it.

**IRVING** Yeah. Yeah. They empower you to do it. What's the right way to say? You want to help that empowerment. What  
**WLADAWSKY-  
BERGER:** do I mean by that?

Well, it just so happens in December of '96, there was something called Internet World in New York City. Lou was the guest speaker. And with Linux, similarly, sometime-- I think it was in early 2001-- Sam Palmisano was the guest speaker. So you are going out of your way to include the CEO, the top management, and show them as visible early supporters. And that's almost more important internally and externally at the beginning. But externally, you don't have a lot to sell yet.

You don't have a lot of people. You're out there, and you want people to know that you're out there. But more than anything, you're buying time because you're building stuff. And the strongest signal is the internal signal so that when you show up and say, hey, this is really a jerky thing to do, well, I guess Sammy's a jerk. You want to work that very hard. And without that management support, it's almost impossible to do this work.

I would think it was possible. I don't know if we have any counterexamples where top management didn't support an initiative and people. I mean, at that point, you almost have to get rid of the top managers. I mean, there's a lot of internal politics in the company, but we're not talking about that. We're talking about a situation where top management is-- hopefully, by the time you are out there, you have already convinced that management is not going to do it. Otherwise, they won't make-- I mean, otherwise, they won't let you do it.

Most companies don't give interviews access to the press. Representing the company is something that's controlled very, very, very, very, very carefully. You cannot do that.

**AUDIENCE:** I like to reinforce what you said about when you the fact that Lou Gerstner supported you got you in the door with the middle managers. But you had to really sell the issue because-- on your own two feet. And I would say, that's very, very true. If you always come in and say, well, Lee Gordon says this--

**IRVING** No, no, no.

**WLADAWSKY-  
BERGER:**

**AUDIENCE:** --that's not going to work. You have to go in. That'll get you in the door, at least.

**IRVING** Yeah. In fact, my view is it would be considered bad form to start talking about Lou because it's on the table.

**WLADAWSKY-  
BERGER:** Everybody knows it. So don't mention it. Just talk about what you want. Just talk about what you want them to do and so on.

And alternatively, if you don't pound the pavement, and go visit all these people, and do these activities, and send people to Thailand, and Europe, and all that, the fact that Lou supports is not worth anything. So that's necessary, but far from sufficient. We have to now build.

At some level, I suspect it's no different than if you're starting a new company. The fact that some VCs gave you money, well, this is I'm giving you money, you wouldn't be there. But because Kleiner Perkins gave you money, you can still fail. I think that's the way to look at all this.

Any final comments? So then next week, we'll continue our discussions of the organization. Any comments? By the way, let me just put up this slide. I think some of you got here later on the class project.

I showed this slide before. Any questions from people who weren't here? You all got this in the email. This is the same thing as in the email. Everybody is clear what we need and so on? And then everybody's clear on your batting order of the 11 projects? I'm sorry?

**AUDIENCE:** I said, this headed to colleague.

**IRVING** Yes, it was. If he could see that, more power to him. And as I said, I'll post it also in Stellar. OK, thank you very  
**WLADAWSKY-  
BERGER:** much.