HOW TO PROSPER IN THE ERA OF THE INTERNET

Editor's Note: By all accounts Béla Hatvany gave one of the most stimulating Miles Conrad Lectures in the history of the talk. He gave it live and without a script. Fortunately the tape recorders were running. The talk that unfolded from the floor was more like poetry and fine prose than a technical paper. Perhaps that is what kept the audience spellbound. In editing this transcript we have done our best to retain the artistic merit of the original performance, though words alone cannot help but fail. This paper will have to suffice as the artifact that documents the moment. But, in short, you really had to be there.--RTK

2000 Miles Conrad Memorial Lecture
NFAIS Annual Conference
Béla Hatvany, Co-Founder, SilverPlatter Information
I was rather captivated the other day by a quote that someone attributed to Nietzsche: "God made man in his image, and then man returned the compliment." It helped me to be aware that my projection of whatever I am is the filter through which I understand everything.

I am informed by many great traditions; one of them rooted in the idea of eliminating suffering. About 2,500 years ago, a teacher, when asked to summarize his teaching, summed it up in one sentence: "The path to the cessation of suffering is no clinging, no craving, and no ignorance whatsoever." I like pronouncing 'ignorance' as 'ig-norance' because that, to me, is what it is.

In our shared context, I've noticed that our suffering arises from clinging to old models (like subscription models); or craving for something to happen that isn't about to happen; or ignoring an extraordinary phenomenon right next door to us--a thousand-fold increase in usage--while our collective revenues remain approximately flat. So here we are, just like the typical human being, caught up in suffering, and I am with you in that.

Looking for Untrodden Ways
I want to tell you a little bit about me and what informs my perspective.

I was born in 1938. My father was a Hungarian Jew who came over to England. My mother was displaced by the Spanish Civil War, and she came to England. My grandmother was killed in a Nazi camp. When I found my wife, she too happened to have been with her family in a Japanese concentration camp. So, we were both nurtured in a world of fear and scarcity.

My father was about 40 at the time he immigrated to England, he was born in 1899, and he had a lot of little children. He wasn't allowed to work in Britain because he was a potential "enemy alien," and so he had to find a way forward. I was privileged to have him model for me ways forward, by finding untrodden paths.

He had been an industrialist. He became an art historian and an international bridge player and a very successful selector of winners in the horse races. He prospered fantastically. He had a great system, and he just consistently won until the bookmaker discovered that he was a consistent winner. Then the bookmaker started to pay him a commission so that he placed all his bets with that bookmaker, and the bookmaker was then able to lay them off with other bookmakers and thus make even more money. He modeled looking for untrodden ways. I am programmed by that modeling.

I was educated in great schools and universities. Despite or because of this, I consider that our education is rooted in a totally erroneous base. It is training us to compete. The fundamental training that is needed, in which we get no classes whatsoever, needs to be how to communicate with each other and how to collaborate.

Two Tenets: Collaboration & Service
My wife has also helped inform my thinking. She gives parent training group sessions. They are about enabling communication between children and parents. They are absolutely brilliant. I go there and

make the tea, and I learn more about effective management there than in any other forum. I did go to the Harvard Business School, mind you, which also taught me a bit, but these training classes are right on. They are about the fundamental training that we need--and in which we get no classes at university--how to communicate with each other and how to collaborate. Collaboration and service, that's my basic philosophy of doing business.

In fact, I will go so far as to say there is one root to prosperity, and that is collaboration. I can tell you a story that demonstrates it in a nutshell. Back in Neanderthal times, two guys are sitting in a cave snarling at each other every time the other gets near. Come back a few years later, and you'll find them picking fleas off each other. You see, the quality of life has improved absolutely dramatically. And that is what wealth is about.

Prosperity is deep-seated comfort--mind, body, and spirit. Of course we are focused on the physical side of it--of having plenty of stuff. But there is also this mind stuff that we're doing here, and there's the spirit stuff of enjoying each other's company, which comes out of actually collaborating and working closely together.

So given all of this, I have rooted the organizations which I've brought together on the principle of collaboration. I've orchestrated an inquiry, engaging all the staff in a dynamic question to which we're mutually seeking an answer.

My first tenet, then, is collaboration. My second tenet is service. In my companies, I've stressed serving all our constituents in a balanced way. Those constituents are our customers, our business partners, our employees, and our investors. We serve our customers by providing hassle-free services, which are really useful to them. We serve our business partners by looking after their interests. We serve our employees by enabling them to experience themselves as co-creators in an empowered and enabling environment. We serve our investors by giving them a good return. All are served in a balanced way.

The Untrodden Way of Distributed Processing

Another factor that informed my orientation was that early on I worked with process control computers. In 1956, I was given a scholarship by British Petroleum to go to university, where BP had thousands of end instruments attached to a forerunner of the minicomputer. It was quite an extraordinary example of effective distributed processing. At the time, most data processing computers were based on another architecture, which was nowhere near as effective. Then, in 1960, I became an analyst for installing computers in big banks in London. There were 4,000 branches. We had extraordinary distributed processing systems there. This early experience in distributed computing colored my thinking for many years to come.

Ten years later, in 1971, when I founded CLSI (Computer Library Services Inc.), the important breakthrough we achieved was on a minicomputer, a machine that most people thought was pretty pathetic. Most people were mainframe-oriented then. However, we did produce extraordinary results by networking minicomputers together. CLSI ended up having more than an 80% share of what is now known as the OPAC (Online Public Access Catalog) industry. My wife wanted to go back to Europe, so we sold CLSI.

What happened next was ironic. Conventional wisdom in the late 1970s-early 1980s favored the mainframe computer. Thyssen Bornemisza, who had bought CLSI, put in a manager, who took it back to using mainframe platforms, just as the mainframe industry was being eroded by the minicomputer and distributed processing. They were going back to mainframes; just as the world was beginning to comprehend the importance of distributed processing. CLSI lost its lead and the industry fragmented. So, you can see, I'm kind of nuts on real distributed processing. It's a solution that works much better . . . and not only in automata, but in human structures. I do not like monolithic centralized organizations.

The human body, with its many equal parts working together, is a good model for an effective organization. It is a better model than the monolithic, centralized organizations we have created to

run things. There are approximately 10 billion cells in the human body, and one day there may be 10 billion people in the world.

I see the world as a single corpus humanitatis, and it's now getting wired together by the Internet. We've always had societal nervous systems. They have been rather ineffective, resulting in an organism like a squid with uncoordinated limbs. But now, with the Internet, we can have a much more proficient societal organism that can work as one in a more effective way. It is one of the greatest upheavals in the evolution of corpus humanitatis, this formation of many parts into a single coordinated body. But here we are, a tiny cluster of neurons, clinging to outmoded ways.

The Untrodden Way of CD-ROM
I'd like to talk to you, with hindsight, about what the thinking was that enabled us in SilverPlatter to have the perceptions that we had and which enabled the life of this whole community for many years, to some extent.

When I went back to Europe, I had everything I needed, including a lot of children. I started to wire the house with one of my children. I'd sit in the kitchen and tell my wife how to organize the kitchen. She got pretty fed up with me and said, "For God's sake, go back to work." And so I looked around.

In 1982, I got very excited about the audio CD. I realized it was digital, and then I heard that it took 150,000 characters to represent one second of music. I did a quick calculation of what a one-hour CD would hold, it was about 600 million characters. That's a couple hundred thousand pages of paper, and I looked at this miserable little bit of plastic, and it just occurred to me that it was the greatest publishing tool possible. It was replicable; you could easily make copies of it. It was a publishing medium. So I talked this idea around with great excitement, and people said, from different perspectives, "You're crazy, because no one's got drives, so who would bother to buy a title? and no one's got titles, so who would bother to buy a drive? And besides, that thing is much, much too slow. It's got one-second average access time, and you know, on our typical computer, you get two seconds typical response time after doing about a couple of dozen look-ups to randomly access the information."

So I considered the mainframe computers at Dialog. There were hundreds of users accessing data through just a few disk drives, so I knew there had to be other index structures that enabled access with very few look-ups. And, lo and behold, I suggested that we go to the library and we discovered that IBM had invented new index structures about a decade earlier--STAIRS.

Then what came up in our conversation was: "If we find something that's expensive enough, people will buy a drive without bothering about the expense of the drive. So where is there a really expensive set of databases to start?" And I looked at what the likes of Dialog were charging by the minute or whatever it was then. I did some arithmetic and said, "Cor! That is a lot of money every year."

From there I ended up approaching a few of you. I remember the ones that got excited, or not excited necessarily, but were interested enough to allow us at our expense to do a proof of concept. They were Elsevier (EMBASE), Public Affairs Information Service (PAIS), American Psychological Association (APA), LISA, ERIC, and Eurolex (subsequently acquired by another company and dismembered). It took Elsevier ten years to actually enter into a commercial relationship with us, but we did do a proof of concept. APA went ahead, and so did the others. We launched SilverPlatter.

CD-ROM was then this seemingly innocuous medium. However, it was to have the power to topple the status quo. How was it able to accomplish this in the face of the fear of competing technologies cannibalizing existing revenues? Yes, this fear existed in those days as it does now.

In those early days it was clear that a CD-ROM could not possibly support more than one user at a time. You just couldn't imagine it supporting more than one user. It was only just fast enough at the time to support one impatient user. We only had 128K IBM-PCs. We were only able to sell a single-user subscription.

The subscription model is a great business model. It's repeating revenue. Every year the guys pay for it. It's terrific.

What made CD-ROM into a Trojan horse was that the technology went on advancing. But instead of destroying the industry, the new technology actually enabled prosperity in the industry to continue.

In 1986, we were actually getting paying subscribers, and by 1989 it was going right through the roof. It was still a small part of the publishers' income, but CD-ROM sales certainly contributed a lot to the bottom line.

At the same time, SilverPlatter was listening to its user community who wanted lower costs. The university libraries had queues 24 hours a day. Students were lining up at the systems to use them. The demand was so great, but the pricing practices of the industry, which made access only affordable to a few privileged searchers, were bottling it up.

The initial model that had existed for our calculations of what a single user price subscription should cost was something like $5,000 a year for the APA PsycINFO database. However, we created Multiplatter, which enabled a number of users to use a single CD-ROM at the same time, and, before hardly anyone knew it, we were getting only a hundredth of the cost per user that we used to calculate the subscription price when we started. The CD-ROM was being used day and night. And now we had ten people using a single CD-ROM. This allowed many more graduate students to use it and even some undergraduates.

Then I said, "well, this has got to go further." Client-servers were beginning to emerge, and I said, "well, let's produce the ERL (Electronic Reference Library)". Up to then, I hadn't really had much opposition from inside our organization. But when a few other technologists and I proposed that we produce ERL, I got a near riot from most of the organization. They said, "If you produce ERL, the University of Michigan is going to buy it. And we've got 23 subscriptions there, that number will reduce to three. And then, how is the company going to survive? Our revenue will go down because we'll cannibalize our own business base." So there were suddenly two camps in the company: there was a small, little camp advocating future business, and then the big camp that was doing all the current business. So I found that the art of going forward was to really enable the current business to be done, but to adamantly go ahead and create this new, much better technology in the knowledge that the world of tomorrow would be a much bigger place than the world of today.

The Way of Isabella
In preparing for this talk, I was trying to think of some models in history that could inform us. How does one create a new approach to doing things in a new way, while keeping alive the old ways, at least for as long as they need to survive? Are there any models in the past that could enlighten us? I started to think about the Age of Exploration.

One of the situations that came to mind was Venice just before Marco Polo existed. Venice was an extraordinarily prosperous city, and there was this guy Marco Polo, whose father and uncle were away doing all sorts of explorations--opening up new trade routes. Marco Polo grew up, and when he was 17 he became obsessed with the possibility of opening up vast new trade for Venice. He went off and spent a few decades out there, while Venice continued to prosper. All the merchants in Venice went on conducting their affairs in a traditional businesslike way, and they continued to prosper. But Marco Polo brought back whole new relationships, which opened up vast new terrain for Venice. So, that's been one particular model of a way forward.

Then there was the model of Queen Isabella of Spain, where she herself took charge of managing the transition. Isabella was interested in the New World, and she sent all these guys to go and grasp the opportunities in the New World. That was another organizational model. Spain continued to function and prosper, while these new horizons were being opened up out there at the same time.

There was also the merchant model of Holland. And then there was the merchant-banker model of England, when England sent out its ships (all largely financed by the City, in the beginning), which is the equivalent today of the venture capital model.

So all of these models have occurred in history, and when SilverPlatter adopted the ERL model, I was the Queen of Spain.

Here's the curve of the CD-ROM: In 1989, it was riding up the steepest possible trajectory. And I was saying, "Now let's start ERL." And when we started ERL, it just cost money. There was tremendous contention that went on for years within the company, oscillating backwards and forwards. Then, lo and behold, ERL started to sell, and all sorts of people that had never bought CD-ROM before started to buy.

Now we were at a thousand-to-one cost reduction. On the average one minute of search time was down to a thousandth the price that had been paid in the online environment. At the same time, we had much better functionality, because there was more processing power per end user than there had been before. So all sorts of people started to buy that had never bought before, and undergraduates started to use it. So ERL started to contribute significantly to our bottom line, and all the internal resistance evaporated overnight. What had been needed was the will to carry it through that period of transition. It was a very expensive effort.

The Untrodden Way Forward
Then, in the early 1990s, it was clear that this broader network--the Internet--was the way to go. Again I attempted to be Isabella and to open up a new way of doing business. But actually what happened was that the company had grown too big for my skills as monarch. I have so far been unable to actually enable an effective initiative in this whole new networked world. So I stand before you as one who has failed to find a way to grasp the prosperity available.

So here we are. We're right at the center of an arena in which enormous prosperity is available, and the organization which I helped give birth to is doing a very nice job in all sorts of things. I know some of you really love us still. But the central issue of finding a way to go forward from here--taking advantage of this whole new medium--we have not so far accepted as an organization. So I feel like a little squeaky wheel sometimes. I'm going to do some squeaking here about some ideas, which I've been squeaking about for some time.

I think we really need to get back in touch with the fundamental values that we contribute to society. I recall the story about the chairman of Cunard standing on the bridge of the Queen Mary on a beautiful day.

The company is doing fantastically well; it's got this great fleet. And a noisy little airplane buzzes overhead, and he gestures dramatically at the sky, and says, "No one will ever fly across the Atlantic in one of those drafty little machines when they can use one of our state cabins!" He was positioned to be the greatest airline in the world, but in his mind, it was ships--the Queen Mary--that was what the company was about. It was not about transportation it was about SHIPS. Like we are still about JOURNALS, or about SECONDARY PUBLICATIONS, or whatever.

What is the underlying, real service?

Why did people get into ships? They wanted to go somewhere. Why did people get on camels? Well, they had some goods that they wanted to get somewhere. They wanted to transport themselves (or some goods) from point A to B. There was a whole progression of different industries from caravans to ships to airplanes that emerged. And the extraordinary thing is that the underlying need was the same, but as technology changed, industries came and went. They each got infatuated with their own technological solution rather than with their underlying purpose.

We here are infatuated with the artifact of the journal. They're beautiful things. But we have all sorts of skills.

And then there are some more subtle half-truths that surround us: the publish-or-perish thing in the broader environment that we serve; the idea of copyright being sacrosanct, as if it's a human right. What about societal rights? What about community? What about all of us contributing to the common mind?

At any rate . . . in my thinking, the fundamental purpose of our cluster of industries is to enable the knowledge creation conversation of society. In the past we found a particular methodology of doing that. It grew out of newsletters sent to communities of like interest a couple hundred years ago. And it grew from there into the world of journals.

Then we had too many journals, so we got into secondary publishing. But the fundamental purpose of all of these things is to enable a knowledge creation conversation in a community of like interest. At least that is a way to state the fundamental purpose.

If Cunard had said, "The fundamental purpose of our business is to be in transportation," he would have started a little rebellious thing out there--Cunard Airlines, and really spent most of his time with that rather than preening himself on the bridge of his ship. So, I would say the way forward for us is to do what Cunard should have done. The way forward is for us as leaders in our respective areas to really know the underlying purpose of our business, the purpose that will not be disrupted by new technology. The way forward is to continue to embrace our ends, not cling to our means.

Managing Our Enduring Assets
Now, we are beginning to grow a new nervous system--in a very primitive form. It's just the early days. The Internet we have today is the "drafty little machine," but still there's the underlying principle that's already there: heavier than air machines can fly. That means that liners will fly soon . . . beautiful lovely liners.

It's rather like when the first fish crawled onto land and learned to breathe. Elephants, giraffes, human beings . . . all became possible. So the kind of nervous system--the corpus humanitatis--that we will have in a few short years, is coming into being rapidly around us.

How do we continue to do what our purpose has been, which is to enable a knowledge creation conversation of corpus humanitatis? What are the assets that we bring to that endeavor? We have all sorts of skills that are not applicable, but I think there are at least two main assets that we have that are extensible.

First, we have subscriber lists which each represent a community of like interests. We're in relationships with these communities. Some of us have violated those relationships by raising our prices too much. And what's actually happened is there's a real breakdown going on in the industry, in that all of our customers are combining together in consortia to negotiate better prices. We've created a conflict. So our business model has become extraordinarily dysfunctional. We actually have to negotiate every significant sale between a buyer and a seller. Can you think of anything worse? And at the same time our model was putting price barriers in the way, the Internet was putting nothing in the way of people coming on. So the Internet's gone up a thousandfold, while we've remained flat. But still our customers love us a bit, so we still have the subscriber list. We know who they are. It's a great asset.

The other asset is based on the fact that we are very social beings. One of the things about social beings is we respect each other's opinion, or at least we listen to it. When I'm trying to find the best computer, I go to places which I know thoroughly evaluate all the different computers, and I'm guided by them. Since we, at our roots, "manage the authority," we are in fact organizations that create opinion with authority. The editorial board is a manifestation of this strength. We've learned to somehow orchestrate the creation of opinion-makers, put them in relationships with each other, and provide a context in which those opinion-makers wish to participate. So we have this skill which we can continue to use in creating a site (or a neuron) out there with millions of axons going out into the world to that community. It's really a question for you: How can that thing that we do, which is organizing opinion makers and making authoritative opinion in society, be moved onto the Internet?

Those are two of the enduring assets that I think we have. And, of course, in the meantime, we must organize ourselves so that most of our organization is effectively "gleaning." One of you gave me that beautiful word. I was talking about Marco Polo, and Maureen Kelly wrote back and said, "What about the gleaners? The guys who are still making money out of the old ways?" Well, of course . . . we need to manage our organizations to assure that nothing of the old ways or the opportunities of it are going

to waste, as long as we don't allow the gleaners to violate our relationships. The most important thing we all have are the relationships that we have with people. We can't afford to allow the gleaners to violate the relationships through our pricing practices. Because then what happens is the people who had become dependent on us bind together and start to contend with us, which is what has happened already, in many instances. We need to constrain that majority part of the organization, which is running our traditional businesses by certain enduring values, which are paramount to us. Then we need to get going in facilitating the knowledge creation conversation that we have supported in the past in this whole new way, which the Internet enables today.

I've been looking at the Web and Ei Village and Web of Science and all sorts of other beautiful apparitions that are beginning to happen. But I think one of the aspects that cripples us is that there's a kind of incestuous relationship between libraries and publishers, and the actual end user is far away. They don't pay us. The library is in an incestuous relationship with its parent organization. Its getting all sorts of funding which is increasing in these uncertain times. How long can we continue to engage in relationships that don't involve the user? It's luring us to our death.

We need to get back in touch with how to serve the end user, and we need to develop a business model of how to make money by serving the end user. If we had a situation where it was the end user that was paying us directly, we'd be much more sentient to the forces that are going to cause the new business model to evolve. But we're not, so that is a real difficulty for this industry.

I know that if we actually establish a meaningful relationship with the end user community--the community of scientists and researchers--and that they feel well served by us, and we're out there saying, "Look guys, we need revenue. What can we do for you that you can really pay us for?" They'll tell us. Depend on it, they'll tell us. There are all sorts of services that might be very different, yet related in some way. But we can't know what those services are until we engage in that inquiry.

We have this disease as a human race of thinking that the wake steers the boat; that we've got to look at yesterday to see how tomorrow will be. A lot of the conversation I hear is about that, such as the whine: "The government is taking my journals!"

In our society, there is an underlying conversation on human rights. It's to do with free information. So, sure, we've got to effectively handle that, have our diplomats go out and handle it, but on the other side, we've got to recognize the enduring underlying value principles that we're contending with. All I can really do on the business model side is listen to the end user, and, of course, look around at the models that are beginning to work. There really are some.

I envision that what will occur on the Internet is that this medium will be used to depict content of common mind in new ways. For example, for all of the genetic scientists there will be a multidimensional model of the genome. I had this experience of going up and down the Northeast Corridor, showing this multimedia thing in the early 1990s to all the medical schools, and it was on the nature of genes. Everywhere I went they made the same comment about what the mistakes were in it. They somehow each had in their head a multidimensional model in time and space of the processes of transition and translation, and they'd actually acquired this by reading texts. It was unbelievable. So I immediately saw that this multimedia depiction of it would enable someone to acquire an understanding of that model much, much quicker than by using traditional media.

There are N dimensional models of understanding that can be depicted in digital form on the Net, and they can be co-elaborated and co-evolved by thousands of people at the same time. That's going on right now. The beta release of Windows is co-elaborated by millions of people finding out what's wrong with it. It's put out in an imperfect state for comment and refining. And that model is representative of a whole new process: don't get it right; just put it out there; and let everyone work on it and perfect it. So these models of common mind describing artifacts of knowledge in N dimensions will be what the scientists of tomorrow will be attracted to. We have to be engaged in the conversation, which is elaborating this content of common mind, so we can enable it as a possibility. That's really what I view as the beacon that will create a prosperous way forward.

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Béla Hatvany, Co-Founder, SilverPlatter Information:
Béla Hatvany has worked with computers in various capacities since 1956. He founded a number of companies, including CLSI (in 1971) and SilverPlatter Information (in 1983-85). Béla has been married since 1964, has six children, and six grandchildren at last count. He holds a B.S. from St. Andrew's University and an M.B.A. from Harvard University. Béla has received various awards over the years and is a trustee of the World Community for Christian Meditation.

He recognized the promise of optical disc technology and in 1983 began developing a way to store and read data on CD-ROM. With a team of engineers, he created a technology that allowed users to precisely locate specific information on compact disc, formed relationships with owners of important databases, and soon began offering the first SilverPlatter CD-ROM reference databases to libraries in 1985. The rest of the SilverPlatter story is legendary and still unfolding. This year, the NFAIS Board of Directors honored Béla Hatvany with the Miles Conrad Memorial Lecture Award for his outstanding contribution to our field.