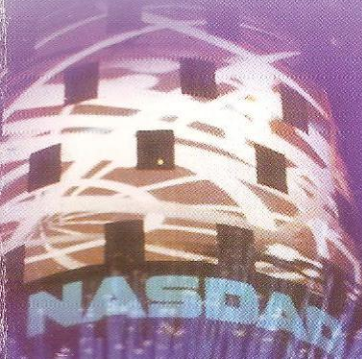




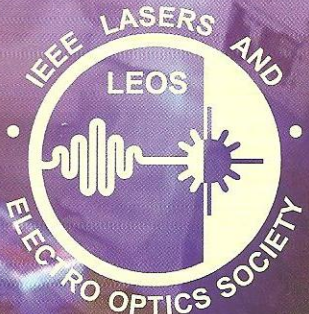
How to start your Photonics Business

International Workshop

Sunday 30 September 2001
RAI Congress Centre
Amsterdam, The Netherlands



Organised by the IEEE/LEOS Benelux Chapter
with support from the LEOS Society



ECOC'01 Amsterdam

International Workshop

"How To Start Your Photonics Business"

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Program Committee
Roel Baets, Ghent University - IMEC, Belgium
(chairman LEOS Benelux)
Erik Pennings, Papyron BV, The Netherlands
Peter Vetter, Alcatel Research & Innovation, Belgium

Program

- 14.00-14.10** Welcome and introduction
- 14.10-14.50** Milton Chang (New Focus & iNCUBiC),
"Towards a successful business"
- 14.50-15.30** Winfried Horsthuis (Independent advisor, Manotick Technology)
"The attractive start-up: the global player's perspective"
- 15.30-16.00** Coffee break
- 16.00-16.20** Stuart Barnes (Ilotron)
*"How to navigate a start up through the current economic climate –
A practical guide to do's and don'ts"*
- 16.20-16.40** Antoine Kevorkian (Teem Photonics)
*"Launching and expanding Teem Photonics, an independent
component manufacturer"*
- 16.40-17.00** Björn Broberg (ADC/Altitud)
*"A laser start-up gearing up to volume production: the case of
ADC/Altitud"*
- 17.00-17.20** Claes Rickeby (Rickeby Consulting)
*"A Metro Optical Exit strategy. The acquisition of Qeyton Systems
by Cisco Systems"*
- 17.20-18.00** Panel discussion
- 18.00** Workshop end

Towards a successful business

Milton Chang (New Focus & iNCUBiC)

The speaker will describe what makes a successful startup and several business models that can be used to start companies in this current environment. He will also describe how an engineer can prepare for an entrepreneurial career.

Milton Chang is Chairman of New Focus, Arcturus Engineers, and OEpic, and has recently formed iNCUBiC to "Help Build Great Companies". He earned a BS with Highest Honors from the University of Illinois, and MS and Ph.D. from the California Institute of Technology all in Electrical Engineering. He was President/CEO of Newport and New Focus, and has incubated more than a dozen companies without a single failure. Milton Currently also sits on the Boards of Gadzoox Networks, Lightwave Electronics, OEpic, OpVista, and YesVideo. He is a Fellow of OSA, President-elect of LEOS and writes monthly business columns for the Laser Focus World and the Photonics Spectra.

ECOC 2001

Entrepreneurship Workshop

Milton Chang
miltonchang@incubic.com

Invsting in Optics

Topics

- Industry background
- Current environment
- Moving forward
- Investor (Incubic) Strategy

i N C U B i C

- Judy O'Brien, Bill Nighan, Tom Baer, Milton Chang
 - Industry insiders
 - Experience from startup to maturity
 - Network with investors and engineering community
 - Seed capital & follow-on rounds
 - Kick-start products: development rapid prototyping facility

INCUBIC

Industry historic background

(business)

- Small companies, low-volume production
- “ PhDs making products for PhDs”
- Sustained by government contracts/R&D funding
- Until telecom deregulation, no telecom business
- Low on professional business executives
- No strong trade association or industry spokesman
- Difficult to attract investor interest

INCUBIC

Recent events

- Intersection that created the big opportunity
 - Demand: Information age, internet traffic, consumer market
 - Technology: Fiber Optics, EDFA, WDM
 - Big companies buying new products from small companies
 - VC-backed startups purchased equipment and bandwidth
- Capacity shortage
 - Over-ordering
 - Buying from anyone who can produce
- Buoyant stock market
 - Investors found VCs who had found optical communications

INCUBIC

Investor environment

- Demands created shortage of optical stock
- Moving towards start of the food chain
- Everyone wants to be an “angel” investor
- Expecting IPO in two years with huge valuation
- VCs competing with VCs
- VC investing in seed-stage company
- 3 “smart technologists” worth \$30M-pre?

INCUBIC

VC behavior

- Competing instead of sharing deals
- Short circuit conventional due diligence
- Create perfect package for IPO
 - Picture-perfect business scenario & charismatic CEO
 - “Go-like-hell” to “volume production”
 - Never mind built-to-last qualities
- One-trick pony with “gypsy” management
- Raid existing companies for talents

INCUBIC

Reaction: people

- VC funding easier than contract funding & more fun
- Why not - a joyride with zero downside?
- Apply contract proposal skills to raising money.
- Mining 40 years of innovation
- At the ragged edge of being legal/ethical
- Invasion of aliens
 - VC's, entrepreneurs, executives
 - Experts/spokesmen

INCUBIC

Sales pitch sold

- Smart guys with a great idea
 - *(Good idea but may not be the best idea)*
- Significant performance advantage
 - *(Aside from a couple of details)*
- Worked for blue-chip companies
 - *(Saw only a small piece of the big picture)*
- Product development is easy
 - *(Haven't got a clue)*
- A few \$million will get us started
 - *(But it takes \$100M follow-on investments)*

INCUBIC

The present startup scene

- Even good products from new suppliers - hard to gain traction
- Imbalanced portfolios in over-funded space
- Portfolio company bailout & averaging ROI
- Loss of appetite for new investments, good or bad
- Common & early-round investors get killed by dilution
- Founders lose sense of ownership/incentives

INCUBIC

Current state

(technology)

- Embryonic in a huge developing market
- Abundant opportunities for innovation
 - Evolution with occasional revolution
- Capital infusion benefited the industry
 - Brought resources
 - Sped up some technology advancement
 - Brought home importance of manufacturing
 - R&D with an eye towards commercialization

INCUBIC

Current state

(business/industry)

- Back to sound business **principles/models**
- Have more experienced **management** talents
- Many capital-starved **orphaned companies**
- Established companies busy **fixing**
- Dilemma: scaled back enough?
- Established companies less threatened by startups
- Less disruption from being raided

INCUBIC

Current state

(people)

- Euphoria> denial> over-reaction> reality
- Risk adverse, rational entrepreneurship
- The environment selects the best
- Impact of entrepreneurs
 - serial entrepreneurs
 - competing with VC as value-added angel investors
 - making donations & returning to University research for the love of it

INCUBIC

Rules of angel investing

- Covering downside **before going** for upside
- How fundable is the **next round?**
- Avoid visionaries **decoupled from reality**
 - Quantify “it can be done”
- Technology can be a long way from product
 - Never fall in love with technology
- Invest within your own “area code”

INCUBIC

Mindset of The True Entrepreneur

- Joy ride is over; only the fittest can survive.
- Founding team has strong business skills
- Avoid falling in love with technology
- Take smart money
- Pay attention to execution
 - Quantify “it can be done”
- Leveraging existing business infrastructures

INCUBIC

Business Models

- Apply the appropriate **business model** based on reality
- Incubation
- The VC model
 - Picture-perfect everything
 - One-trick pony optimized for IPO
- The rational low-risk model
 - Develop at a rate supported by business reality
 - Scalable model
 - Ramp with opportunity

INCUBIC

Incubic strategy

- Differentiation
 - Build great companies is our **first** priority
 - Every company has to succeed
 - Trusted by both management & investors
 - Branding by industry insider, mentoring, patient money
 - Team approach vs. one designated partner
 - In-house capability to kick-start products
- Our goal: “must talk to Incubic first!”

INCUBIC

Public market investing

(Companies to work for)

- Investing in built-to-last quality
 - Established **up-and-comer** with critical mass
 - Can gain new **markets plus** market share
- Critical mass
 - Technology and management depth
 - Manufacturing infrastructure
 - Strong balance sheet
 - Stream of new products in pipeline
- Buy low, sell high!!!

INCUBIC

The attractive start-up: the global player's perspective

*Winfried Horsthuis
(Independent advisor, Manotick Technology)*

One of the common scenarios in the evolution of a start-up business is to be acquired by another company. Although this outcome is not usually the intention at the founding phase, it is definitely a possibility, which needs to be looked at during the founding and early company stages. Both from a funding and a valuation perspective it is a key attribute to be 'highly wanted' by established companies, hence it is important to understand what characteristics make a start-up interesting in the eyes of large corporate acquirers. It is also highly relevant to understand the current business environment, since what is good in today's market may not be ideal under different market conditions.

The presentation is focused on finding answers to these questions through real world examples as well as through the use of analytical methods to help understand the photonics industry play grounds.

Winfried Horsthuis obtained a Ph.D. in Engineering from Twente University, the Netherlands, in 1987. He joined Akzo Nobel Research to participate in research on materials and applications for the Information Technology sector. In 1993, Winfried was appointed General Manager of a newly established Business Unit to commercialize the company's polymer waveguide technology.

In 1996 he joined JDS Fitel as Vice President Strategy and Business Development. After the company executed a large number of strategic acquisitions and mergers (varying from start-ups to large corporations), Winfried changed gears again and went back into the daily business operations. His last assignment in JDS Uniphase was Vice President Waveguide Products, with responsibility for all of the company's passive waveguide businesses.

In June 2001 he resigned to establish himself as an independent advisor, located in Manotick, Ontario.

“The attractive start-up: the global player’s perspective”

Winfried Horsthuis

presented at the International Workshop

“How To Start Your Photonics Business”

Benelux Chapter of IEEE-LEOS, RAI Amsterdam, Sunday,
September 30th, 200130

Founding a company

- There are many reasons why people found their own company, e.g.
 - Realizing your old entrepreneurial dream
 - Prove that “it” can be done a certain way (i.e. *your* way....)
 - Strong believer in a technology/solution, and no one else seems to understand.....
 - Become rich and/or famous.....at least give it a try
 - Stretching one’s horizon.....personal growth

Starting up

some issues to be dealt with

- Mission
- Product definition
- Intended position in the business column
 - Defines Customers, Suppliers, Competitors
- The ability to execute plans
 - People
 - Capital
 - Relationships

After the start

- Prove it
- Grow it
- Grow it some more, compete with others
- Keep growing.....but now to compete with more, bigger, stronger companies
- *Go IPO... .. or not*
- *Be acquired... .. or start acquiring...
this will one day be on your list of issues*

Acquisition Land

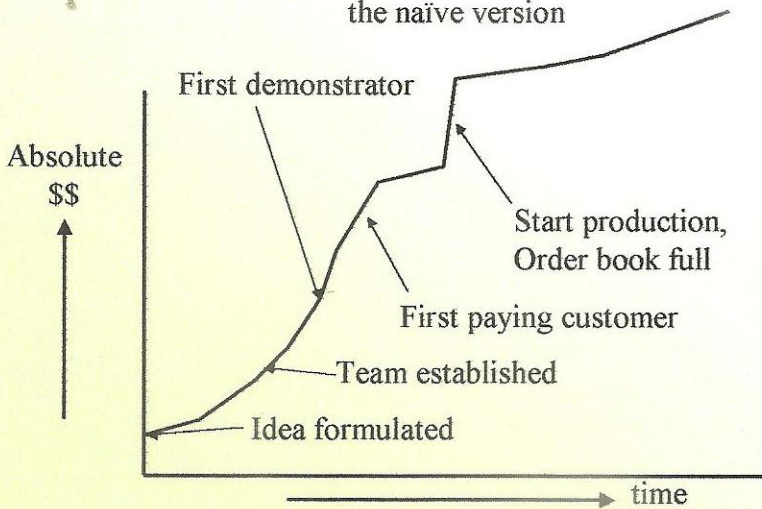
- One kind of company fits all?
 - Typically not true for Targets, neither for Acquirers
- “Demand” determines selection criteria
 - depending on *business climate*, target selection is driven by different criteria
 - General criteria (valid under most industry conditions)
 - High caliber people, technical fit, significant cost or margin savings
 - During strong industry momentum phases, criteria are largely driven by ‘perceptions’
 - During weak business momentum phases, criteria driven more by the fundamentals

Some analytical tools

- May be helpful to try to see the picture from the possible acquirer’s point of view
- Need to understand some principles
 - Valuation curve
 - Play-ground rules for accumulators
 - Impact of various start-up scenarios
 - Organization impact

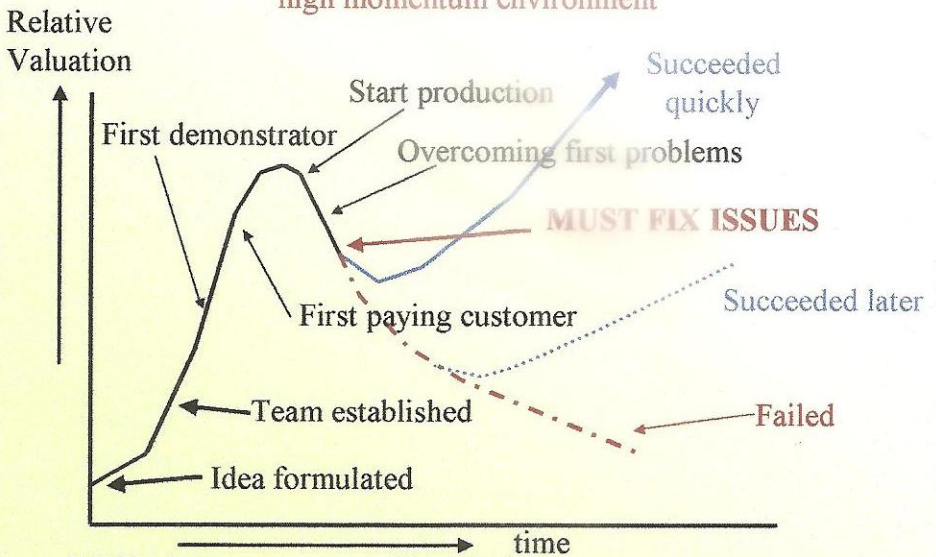
Valuation curve

the naïve version



Typical Valuation Curve

high momentum environment



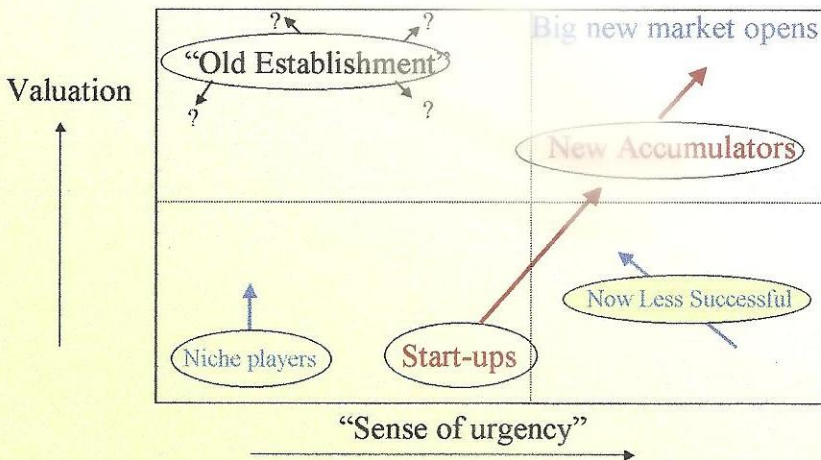
Protecting the Value

- Founders typically excel in early phase skills
- When reliability / manufacturability / cost become important, there is nearly always an experience / expertise gap

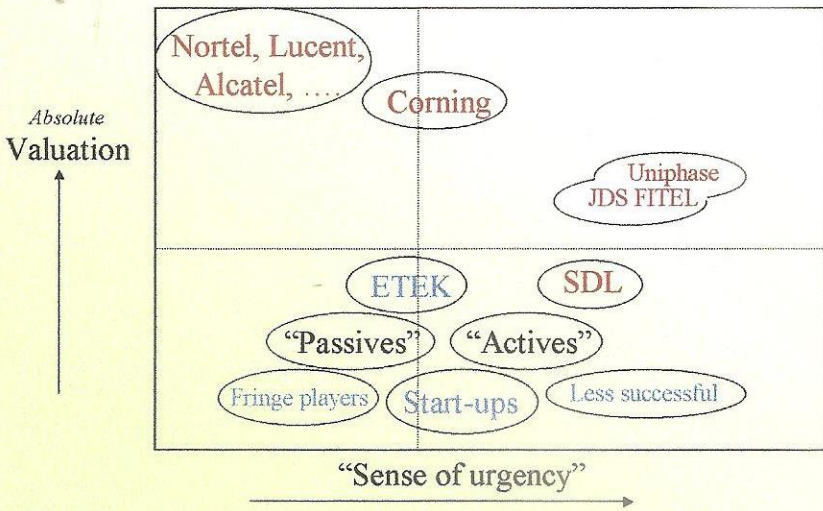
Really Recognizing this at the start may prevent the fall in the curve.....

“Acquisition Land”: play-ground rules

one way to look at it....

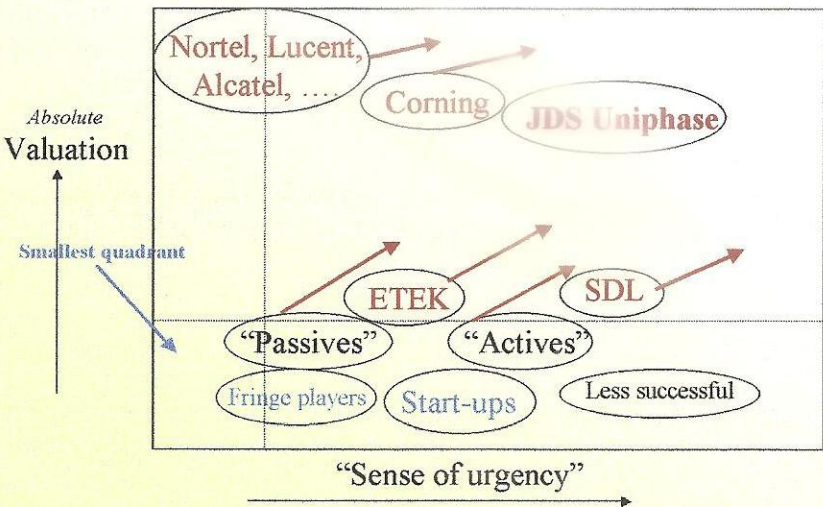


Photonic Components 1999



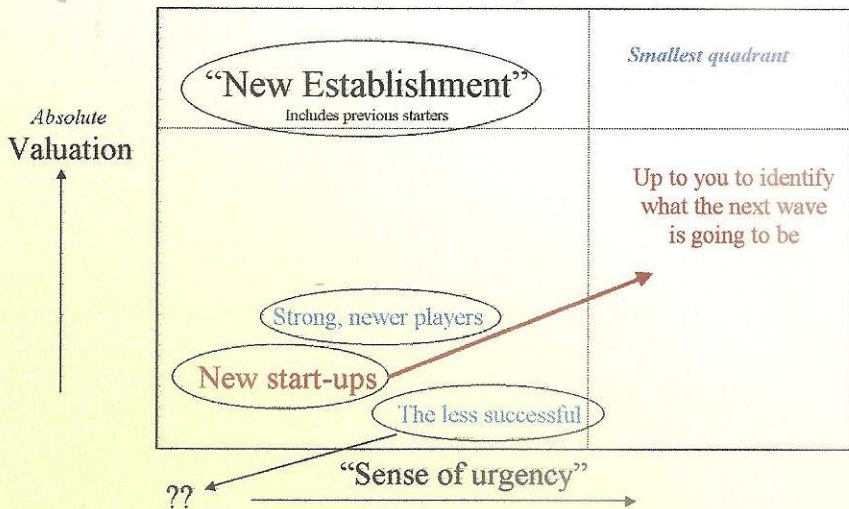
Photonic Components 2000

"if you can't beat them, join them"



Photonic Components 2001

“ready for a new cycle”



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Looking at the environment

thinking ahead of the rest

- Look at your business as if you were the CEO of an “established player”; a “problem case” as well as a “steady niche player”
- Be creative in devising your own models to describe the business you are operating in
- Spend time with people with a lot of knowledge of the industry (mainly to listen)
- *Understand that getting info usually means providing something in return*

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Growing the Start-up

- The “minimum” scenario
 - Keep the company mean and lean
 - Focus on key topic(s) for which start-up was initiated
 - Prove your point as fast as you can through solid engineering and reliable technology / products
 - Creates a company with which it is easy to collaborate
 - Poses no immediate threat to larger competitors / customers
- The “maximum” scenario
 - Build an impressive ‘empire’
 - Create as much momentum as possible
 - Focus on establishing a complete set of business processes
 - Head-on with establishment
 - Must do it yourself all the way

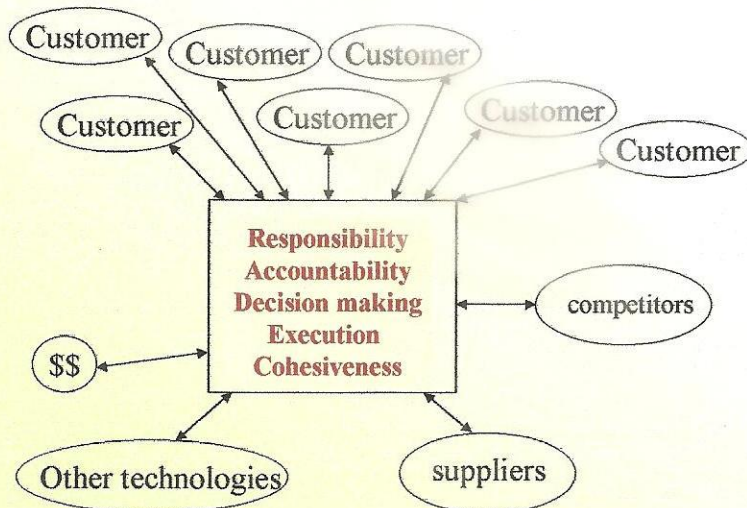
Time and value impact of min-max scenarios

- Minimum scenario
 - A very focused approach will lead quicker to early results, founders are focused on a few key problems
 - Very useful when the basics are still to be proven
 - Value comes from proving that ‘it can be done, and we know how’
 - Will become a target of larger competitors competing with older technology (possibly acquisition early-on)
- Maximum scenario
 - A complete business approach takes more time and has more risk, since founders and top management have to oversee many tasks and many people
 - Useful for ‘I want a part of the pie’ strategy
 - Value comes from product performance and customer penetration
 - Will become a target of larger players who want to enter a market space (possible acquisition usually later-on)

Organization Impact

- Your staff is your key asset
 - Keep them focused on those areas in which they can deploy their key skills
 - Provide strong management coming from a strong organization
 - Organization model should fit your specific business

The Organization



Wrapping up: *“what’s hot”*

- How can the Target help the acquirer to get an unfair advantage?
 - Technology.....missing part in tool box
 - Product performance / quality..... filling a gap
 - Customer base..... filling a gap
 - Product fit bundling
 - People and organizationadd talent
 - Financials.....EPS

Wrapping up: *“what’s not”*

- How can Target and Acquirer spoil it together
 - Business at both ends continues as usual
 - Customer interface
 - Management
 - Staying nice with each other
 - Avoiding to make the required but painful decisions early-on
 - Making / keeping everybody happy
 - “Not Invented Here” syndrome
 - Works both ways.....
 - We’ve done that, been there.....
 - We didn’t like you in the first place.....

Don't like the idea of acquisitions ??

Get used to the idea !!!

- One day someone will be at your door.....
 - As such a very good sign.....
- It will help if you have analyzed the business environment yourself beforehand.....
- Understand – in stead of believe – what is best for your company, at any stage in its existence
 - Nobody (except for the customers) can force you to give up your independence
 - Continuously analyze different scenarios
 - Don't just stick to your older opinions and /or founding axioms

How to navigate a start up through the current economic climate – A practical guide to do's and don'ts

Stuart Barnes (Ilotron)

With the dust settling after the recent collapse of interest in the Telcoms sector "Business as Usual" signs will be hung outside the institutions that have survived. I say "Business as Usual" as this has been perhaps the 5th correction that I have experienced in my 22 years in the industry and I confidently predict that there is strong future in the industry just like on the other 4 occasions. But life in companies big and small has changed and although there will be undoubtedly significant growth in the years ahead it is unlikely that the financial institutions will countenance the heady bubble economy of last years Telcoms Sector in the foreseeable future.

In this talk I will share with you my experiences of the roller coaster ride of a lifetime and provide a tips as to how to manage in the today's environment. In particular Do's and Don'ts with VC's, Academia, Non Executives, Advisors, The Legal Profession and the rest of the paraphernalia that come with life in Start Up's.

Stuart Barnes received a Doctorate in Engineering from London University. After that he joined STL (now Nortel Research Laboratories) in Harlow, UK working on optical fibre and cable components. After nearly a decade he became Technical Manager of STC, Newport, where he was responsible for developing a new range of terrestrial fibre and cable products. After 2 years he moved on to STC Submarine Systems, rising to the position of Technical Director. Following the acquisition of STC Submarine Systems by Alcatel he moved to Paris to become Deputy Technical Director of Alcatel's Optical Research activities. In March 2000 he returned to the UK to become Engineering Director of Ilotron. He is Visiting Professor of Electrical Engineering at Southampton University.

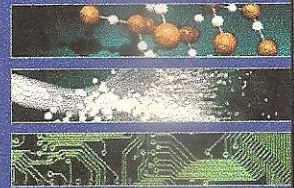
SMART
companies
STARTHere.

Life Sciences

Communications

Information Technology

Investment Sectors



**How to Navigate a Start Up through the
Current Economic Climate – A Practical
Guide to Do's and Don'ts**

Stuart Barnes

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2. How does one start up a company
3. Cash is king
4. Do's and Don'ts
5. Questions

Why join a start up?

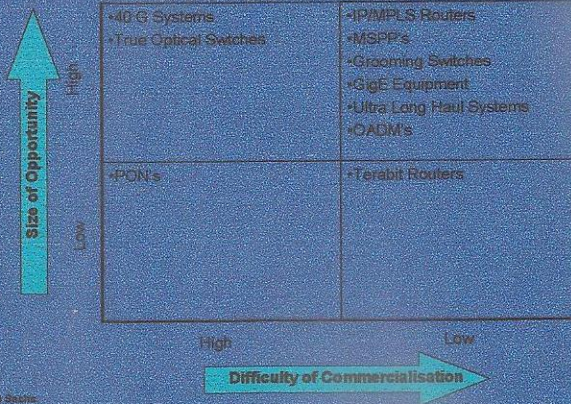
- Work in low bureaucracy environment
- Exciting environment
- Create something and feel part of it
- Make money

How does one start up a company?

- Identify a large sustainable niche
- This should be associated with clear customer need/problem
- Find like minded people (academics, industrialists, VC's....)
- Identify advisor (Optional –See later)
- Write business plan
- Approach VC's
- References through trusted sources open doors!

Which Niche?

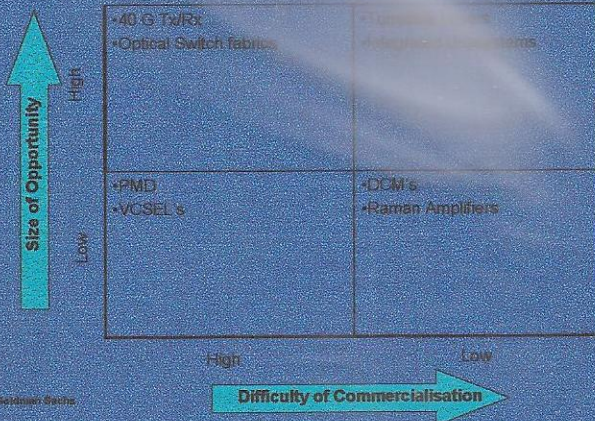
Systems/Subsystems



Source: McKinsey/Goldman Sachs

Which Niche?

Components



Source: McKinsey/Goldman Sachs

Which Advisor – If any?

- Advisor's may be necessary if you don't have access to the financial community
- Many Universities now have focused Business School- who have access to SOME VC's
- When choosing an advisor - select on basis of track record
- In particular ensure that they have Start Up experience in the team
- Make certain that motivational elements are not in conflict with aims of business
- Make them earn their money

Business Plan and Contact with VC's

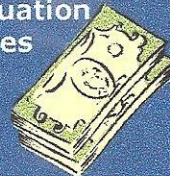
- The Business Plan is your passport to funding – a poor one will not get you to 1st Base
- For Series A Funding it does not need to be "War and Peace". Powerpoint format will suffice
- Some Key Gating Factors
 - Compelling technology – possibly in above
 - Niche must be significant from market perspective
 - There must be sustainable competitive advantage
 - Good management team – Clearly described
 - Risk/Reward clearly and honestly portrayed
 - It must be complemented with good and clear presentation
 - Financials should be clear and subjectable to rigorous diligence

Do's and Don'ts

- **Do's**
 - Tell your partner what you are doing!!
 - Understand the odds
 - Understand the level of commitment
 - Get good NED's (Experience and availability of time)
 - Keep focused on the core proposition
 - Communicate both the good and the bad
 - Grow the business according to it's stage of development
 - Get advise from the real experts – build up a Network with people that have done it (Rarely advisors!)
 - Religiously look after the cash

Cash is King!

- Cash is a honey pot! Everyone wants to get their hands on it
- Unfocussed organisations burn cash at alarming rates
- It should last through the current recessional phase
- Take cash if it's on offer – terms are more important than valuation particularly at early stages



Do's and Don'ts

- **Don'ts**
 - Focus on NDA's
 - Lose focus from what you set out to achieve
 - Be afraid to change direction – But don't forget to tell the Board
 - Get obsessed with valuation
 - Think you can get out quick – This is a long term commitment for you, the team and your family
 - Forget to have some fun and a life

Questions and Answers

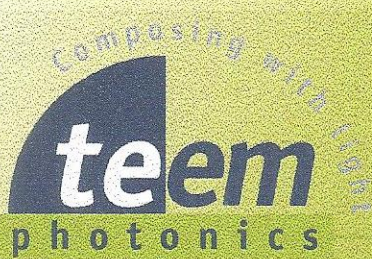


Launching and expanding Teem Photonics, an independent component manufacturer

Antoine Kevorkian (Teem Photonics)

Starting a Europe based company with global sales seemed rare to the point of being counterintuitive less than 4 years ago. Although the situation has now substantially changed, Teem Photonics has met specific challenges in ways that may benefit new entrants. The presentation will outline how the company tried to make the best of its environment to achieve its present position. This includes inception, national regulations, human resources and varying economic conditions.

*Antoine Kevorkian is President and CEO of Teem Photonics. He co-founded the company in Nov 1998 after having structured and headed a private R&D consortium GeeO, that defined and developed the technology. He started his professional career with Schneider Electric developing new applications for Power Electronic components and later for optical sensors. His original background is a PhD in optoelectronics (1987) from INPG (National Polytechnic Institute of Grenoble) and a MS from UCSD (University of California, San Diego) in 1982. Apart from managerial work, Dr. Kevorkian participated in numerous scientific or technical activities, including the chapter on glass integrated components from the Book: *Fiber Optic Communication Devices* (Springer Verlag, 2001).*



Launching and Expanding Teem Photonics

Antoine Kevorkian
President and CEO



Next Generation Optical Networks



- Systems manufacturers face a difficult situation.
 - Increasing system complexity
 - Falling Cost/Gbps or cost/channel
 - Rapidly increasing volumes



Mission Statement

“Make fiber communication systems simpler by integrating their key functions on planar optical components”



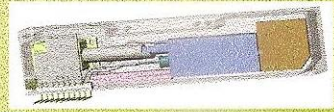
A few words about Teem

- Founded Nov. 98
- 140 Employees
- Headquarters Grenoble area, France, offices in USA, UK
- 4000 m2 manufacturing plant, 4k chips + 1k component/month
- Funding: \$36M, Baker Capital, Banexi Ventures, Lightspeed, other strategic investor: Schneider Electric



First Mover Advantage

- First integrated planar waveguide erbium gain block!



- Combines low noise and DWDM benefits of Er functions
- Intrinsic reliability due to planar approach
- Scalable manufacturing approach
- Ultra compact



Teem's Products

Optical Amplifiers



- Metro EDWA™
- EDWA Arrays
- Amplified Splitters / Combiners

Interface Components

- Fiber Spacing Concentrators ("FSCs")
- Fiber Backplane Organizers



Distribution Components

- 1 x N Splitters / Combiners



Launching a company... in France!

- Initial conditions

- Lack of similar experience among initial IP owner
- Long initial negotiation phase (97-98)
- Lots of good advice against starting a company in Europe (France)
- Important role of early stage investor



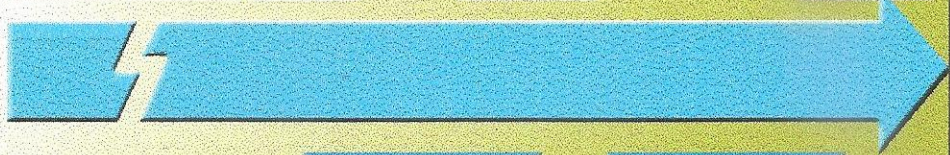
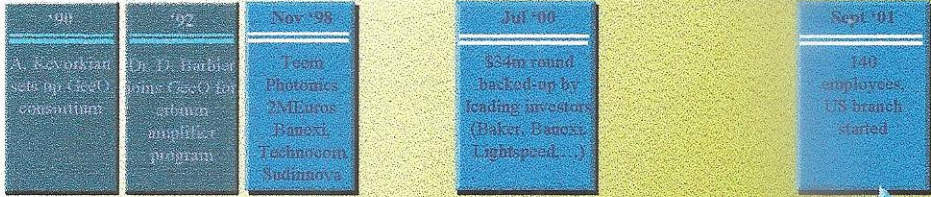
Launching Teem (not just any venture)!

- Reality was

- Need a good lawyer anyway, 3 weeks delay doesn't matter compared to negotiations
- Grenoble area provides a good base of well-trained people
- Turnover is low
- Wages are moderate
- This really was more of a spin-off from Schneider Electric / Radiall / INPG (National Polytechnic Institute, Grenoble)



The big phases in a nutshell



Experienced Management Team

Dr. Antoine Kevorkian
President and CEO
GeeO, Schneider Electric

Dr. James McKenzie
VP Business Development & Mktg
Perkin Elmer, Bookham

Brian McCormack
VP Global Sales, CEO US Branch
Avici, Nortel...

Dr. David Heatley
VP North America
Moore Capital, Salomon Smith Barney

Dr. Denis Barbier
EVP & CTO
GeeO, "Excellence in Engineering" award, OSA

Hervé Hautin
Director of Manufacturing
Philips

Gilles du Sordet
Financial Controller
MG UPS, Schneider Electric

Dr. Serge Valette
Research Director
CEA, LETI



Negotiations in hindsight

- Initial negotiations (over IP) took far too long (18 months)
- Rounds invariably take longer to close than expected
- Significant effort went into adapting VCs national law requirements to company's national law
- Distance and time zone differences must be accommodated for.



Expanding the company: organization

- Sharp evolution in the structure and organization of the company: from start-up to industrial
- Initial team flexible and multi-task oriented
- Latter team professional and specialized
- Organization steps change and adapt the organization to a bigger size ambition while taking into account managers profiles.



Expanding the company: Regions

- Started in France
- 70% sales in North-America -> US Branch
- Distributors for Asia regions
- Sales organization head in the US



Information, Quality

- ERP being put in place for the entire company
- Quality program with ISO certification
- Internal Newsletter
- Bilingual operations French/English
- Multicultural company (5 Nationalities at present)



Thank You!

Antoine Kevorkian

a.kevorkian@teemphotonics.com



A laser start-up gearing up to volume production: the case of ADC/Altitun

Björn Broberg (ADC/Altitun)

The talk will describe some of the challenges associated with setting up a photonics company that markets a disruptive technology that requires capital intensive manufacturing. Various perspectives such as marketing, technology, manufacturing, IPR and financing will be discussed.

Björn Broberg co-founded the tunable laser company Altitun in 1997, which was acquired in 2000 by ADC, where he presently is Director of Engineering. Prior to that, after a period as a guest researcher in Japan and a Ph.D. degree in 1986, dr Broberg has been managing semiconductor laser R&D at various positions.



Mission:

*To be the leading manufacturer of tunable lasers
that enable the telecommunications industry
to provision flexible, affordable bandwidth*

Björn Broberg

now: Director of Engineering, ADC Sweden

ex: co-founder of Altitud

ALTITUN

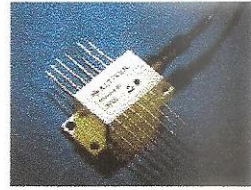
Before Altitud in brief:

- Research in tunable lasers + their control, at IM/IMC/KTH in Stockholm '87-'96
- Series of EU collaborative projects (RACE, ACTS) '91-'96, prototype development
- Market surveys, discussions with potential industrial partners 1996
- Altitud founded in June 1997

 ALTITUN

Company in brief by April'00:

- ❑ Product developed, embryonic manufacturing line
- ❑ 40 people hired
- ❑ Privately held, VC funded
- ❑ Patents, licences
- ❑ Shipping products for evaluation and qualification
- ❑ Based in Kista - Sweden, offices in LA, Charlotte & the UK

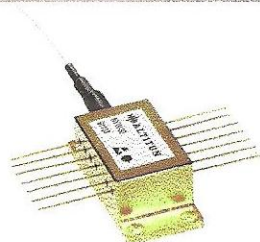


 ALTITUN

Altitun: products



Lasers tunable to
all wavelengths used
in WDM telecom
>80 channels, >40 nm



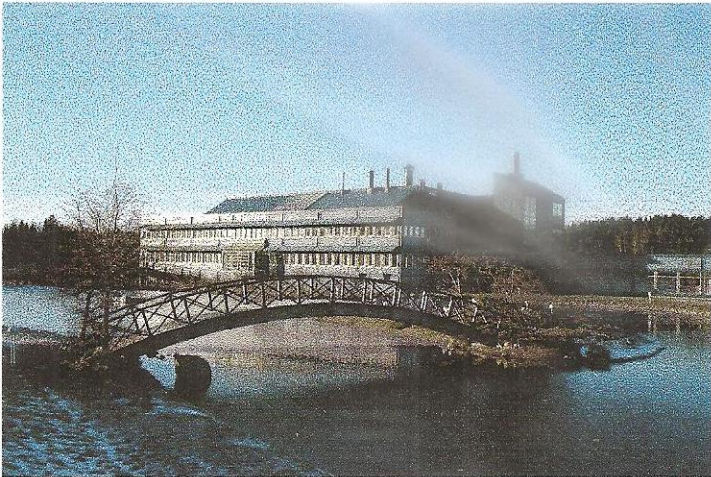
 ALTITUN

Funding track

- ❑ *Seed money, fall of '97*
Founders \$ 0.3m
- ❑ *First round , Jan '98*
Venture capital + private investors \$ 2.7m ("friends of Altitun"
at same rate as founders)
- ❑ *Second round, Aug '99, \$10m*
- ❑ *Acquired by ADC Telecommunications in May'00*



New mft facility



Company



Broadband Connectivity Mission

*Provide "End-to-End" Connectivity Solutions
for All Communications Networks*

MARKET LEADER

- #1 Optical Connectivity Systems in North America
- #1 Worldwide in Copper Connectivity
- Leading Supplier of Wireless RF Components
- Rapidly Emerging Fiber Optic Components



GLOBAL SCALE

- Low-Cost Manufacturing
- Sales and Customer Service
- Distribution Centers
- E-commerce



150 people, massive investments in Järfälla

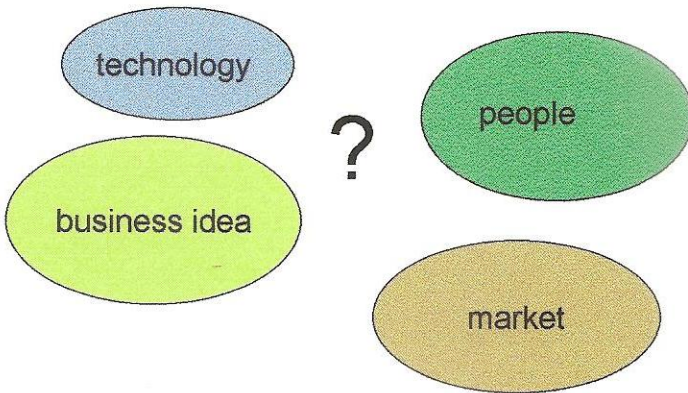


Outline

- At the dawn of time
- Setting up the company
- Running and growing the company
- Conclusion



At the dawn of time



Technology \Leftrightarrow market

disruptive
technology

emerging
applications

reluctant customers



Do market surveys, talk to your
customers but don't listen too
much to them.....

Technology push

Create your own market => use your customer's
customers

Setting up the company (1)

- Founders
 - >100% dedication, "no pain - no gain"
 - complementing each other
- Invite others that you depend on as investors on generous terms
 - you need all friends you can get
 - you need VERY risk-willing seed money
- Secure IPR, licences etc

Setting up the company (2)

- business plan
- get something tangible to engage customers with *early*
- financing
 - do your homework first, deal with VCs later
 - make sure you and your VCs understand each other; there will be rough times ahead of you...
 - fill up with money before you need it

Running the company (1)

- focus on goals, be flexible about means
- what is core, what is periferal?
- in-house production <=> outsourcing
- aim for one size bigger, prepare for next stage

Running the company (2)

- board of directors
- watch your cash balance
- build your brand (company as the product)
- control your destiny => IPO

Sales and marketing

- choose your customers
- essential to have customer from day 1 (almost)
- understand the value chain (customer's customer etc)
- do what it takes to be taken seriously....

So, what is the conclusion?

Stay focused!

A Metro Optical Exit strategy. The acquisition of Qeyton Systems by Cisco Systems

Claes Rickeby (Rickeby Consulting)

June 16, 2000 Cisco Systems acquired Qeyton Systems AB in Sweden for 800 MUSD. The presenter will talk about experiences building the company, second round financing and construction of the acquisition. Reasons for choice of exit strategy, negotiations and post closing integration experiences will be touched upon.

Claes Rickeby graduated from the Royal Institute of Technology in Stockholm in 1972. He spent 25 years in many different capacities at Ericsson often working with business opportunities and first off introduction of new technologies at new markets. From early 2000 until early 2001 he was CEO and later General Manager for Qeyton Systems AB and Cisco Photonics (Sweden) AB respectively. During this period he was instrumental in the financing, deal construction and later integration of Qeyton into Cisco. He is now running a consultancy agency mainly assisting smaller companies to take the difficult step from first product to industrial integration. He is also a corporate board member.

Claes Rickeby
Chairman

Proximion Fiber Optics AB

How to start your Photonics Business
Workshop

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Who is Claes Rickeby?

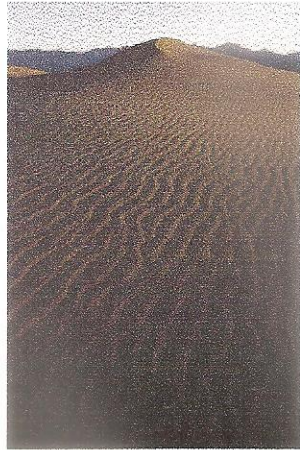
- 25 years with Ericsson
- Joined Qeyton Systems on Feb 1, 2000
- Acquired by Cisco Systems June 15, 2000
- Left Cisco on Jan 31, 2001

• **These are my *Personal Views* on an exciting year 2000.**

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How did Qeyton come about?

- Metro Market was coming out there
- Optical component costs were becoming competitive
- Funds began to be available
- June 1998 Qeyton founded and funded



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How did the company Evolve?

- Six Founders with vision and lots of courage
- Interested Swedish BA's
- Frugality!
- "Who wouldn't like to be..."



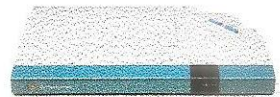
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ONS15200 Overview

- ONS15252 for hub / gateway deployment. Terminates up to 16 channels in a 12U 19" sub-rack, can be concatenated
- ONS15201 for customer prem. / PoP deployment. Terminates a single channel in a single 'U'
- High node and channel counts and long distances achieved without optical amplifiers
- Flexible and transparent to fibre architecture, protocols, traffic types, and traffic patterns
- Multiple protection options



ONS15252



ONS15201

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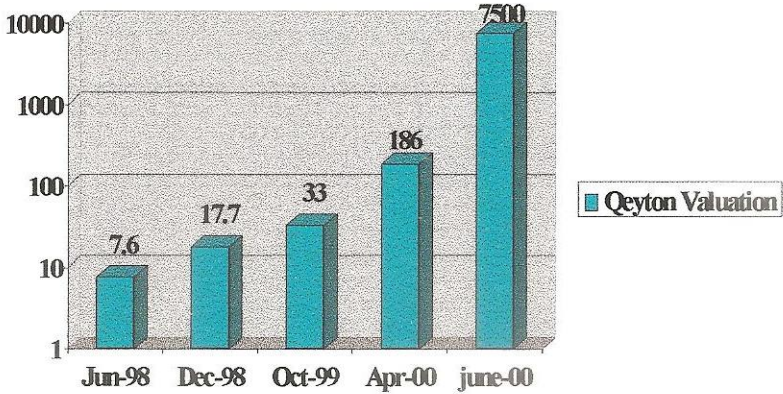
What track to follow for success!

- Make sure there is a market, and clear applications
- Exploit declining technology costs
- No need for "rocket science", or Bleeding edge technology
- Get interested funding-partners



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Qeyton Valuation. MSEK



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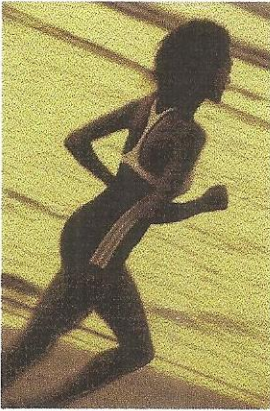
Business Needs

- Customer need and segmentation
- FOCUS on your basic *STRATEGY*, don't try to do it all
- Liquidity above all
- Good local PR support, especially in the US



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Exit Strategies



- Stay Private
 - IPO
 - Acquisition
- AND
- Basically they require an equivalent activity

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Why an acquisition for Qeyton?

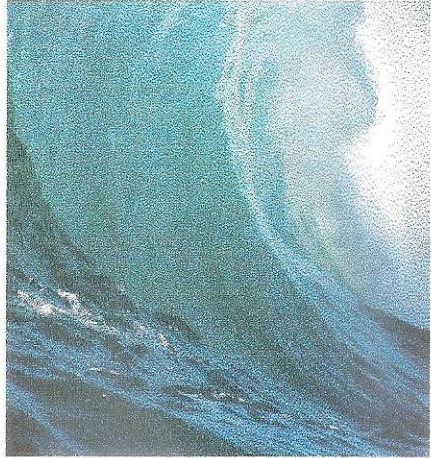
- US market first
- Sales organisation
- Distribution channels
- Production
- Good product shall achieve maximum distribution
- Balance Price /Risk



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The Negotiation

- Long Process
- Make sure you have the funds to survive
- Understand the "Hot Spots"
- Build Relationship
- Be aware of your strengths!
- Leave if needed!
- There is more time than you think!
- Get professional legal and business counsel



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Negotiation agreement

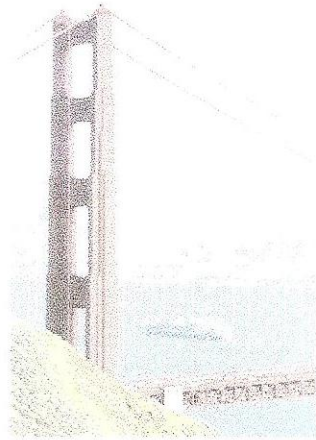
- Invited a qualified local negotiator with whom we had already built trust
- Read all the "fine print"
- We signed with Cisco Systems on May 12, 2000.
- We Closed on June 15, 2000



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Integration Experiences Sept 2000

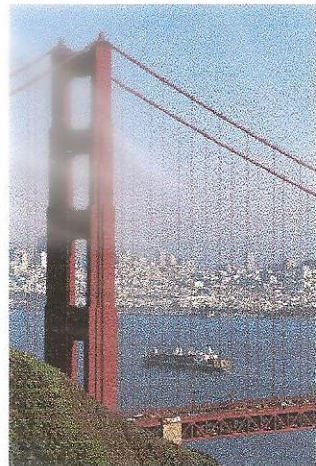
- So far so good
 - Seem to be meeting our market objectives
 - Employee integration good
 - Hard but valuable Work
 - Finish Product
 - Integrate into Cisco's procedures
- Cisco knows the Integration trade



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Integration Experiences Sep 2001

- Product successful on the market
- Team integrated in US organization. Matrix
- Some personnel reductions
- New US Management
- Cisco's work procedures successfully implemented



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Qeyton to Cisco!

What did it mean?

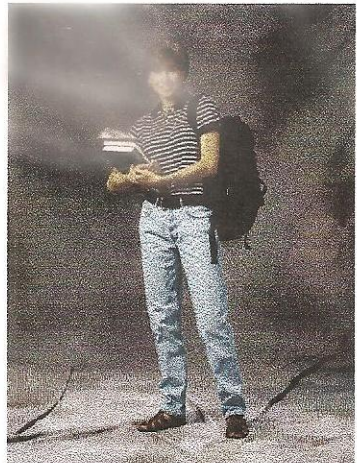


- Big change for everybody.
 - Timing crucial
- Wide and competent support
- Unproven Sales/Market impact
- Managing a different entity

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Recruiting

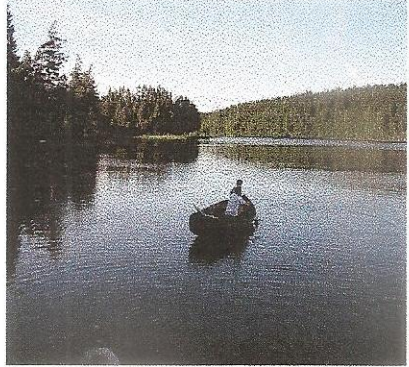
- Before
 - Lowered Salaries
 - Options
- Then
 - Market+ Salaries
 - Bonus Programmes
 - Cisco Options
 - ESPP
 - Cars
 - New alternatives
- Now
 - Lower Options valuation



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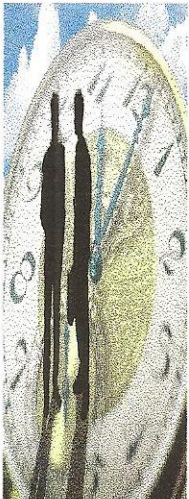
Why was this good for Europe?

- US type valuation proves the competence of European/Swedish engineering teams
- Proves the importance of a market drive for success
- Gives funds to BA and VCs for additional investments in new companies



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May 2000 vs. May 2001



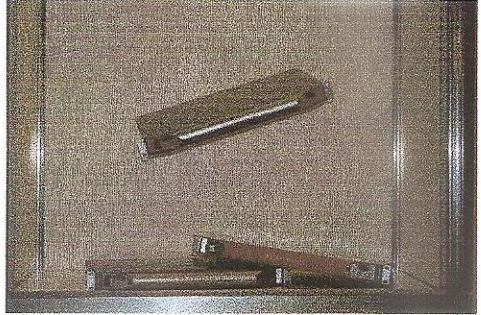
- Have Revenue
- Limit Personnel
- Assure Near-term profitability
- Money is scarce
- Valuations are still declining
- Investors overshot last years
- Options vs. salary

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What is Proximion Fiber Optics AB?

WISTOM(r)

- Full band spectrum diagnose with the high speed and additional functionality of a channel monitor.
- Allows fast protection switching in e.g. optical IP networks.



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Thank You!



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