In this summary you will be challenged to understand the spirit and core drivers of growth: technology, knowledge and individual excellence.

As today’s manufacturing and production systems grow more complex, tomorrow’s science will produce simple solutions. Autonomous agents and emergent systems will change the way you live and work in the twenty-first century.

But these changes don’t have to be met with fear or trepidation. By simply following some simple guidelines for future growth that are being used by Motorola, Honda, GM and others, and by becoming involved in a vision for future systems, leaders and workers, your business will be taken to the next level.

Be challenged to ask the kind of questions that can only lead to explosive growth.

• What are the bad business habits that are at the root of manufacturing problems today and how do you break them?
• What are the breakthrough technologies that you must implement and that will dominate the world of the future?
• And most importantly, what will be the future of your organization? Will you create an “island of excellence” or be trapped in the old ways of thinking that have always held companies in a prison of their own making.

So, be prepared for an eloquent, original and essential read that managers in every area of business and industry must be exposed to.
Technology Overtakes Manufacturing

Manufacturing progress has always been limited by technology and human factors. However, this must not stop you learning and applying the two main components of every production system – machines and people – in different ways.

In the coming decades, manufacturing professionals will be technology partners instead of servants to machines. The future isn’t about bigness or power or even about economies of scale. It’s about smartness, values, supreme technical mastery and constant innovation. In short: The Technology Machine.

Most of us survived the hard marches through the computer crusades of the 70s and 80s and you may have had lighthearted encounters with excellence based on rigid hierarchies during this time. You may even remember the struggle in the 90s toward an enlightened industrial enterprise more focused on people, systems and communication.

Companies like USX that became successful by building bigger operations had to learn to think small and light. They needed to reach outside their walls to find suitable teammates. Yet it still wasn’t enough.

The 90s will be known as the decade that witnessed the final dissolution of all entities we grew up with – our churches, schools, families, government, businesses, health-care systems, music, maybe even our tax and currency system. And this unraveling will probably continue for another four or five years.

Manufacturing professionals should expect to feel great discomfort, many surprises, big highs and lows, and confusion, and be generally “off balance”. Coping skills and pharmaceutical solutions – Prozac, stress-reduction clinics, and natural mood levelers – will be perfected and stretched to their limits.

The Next and Last Frontier

The biggest areas of opportunity lie ahead of and after manufacturing. You must look at the areas that stand in the way of what should be your primary outcome: ‘Ultimate Customer Fulfillment’. The transference of ideas and any other barriers to development are what we call ‘Circuit Breakers’.

These include traditional purchasing, order administration, accounting, middle management, senior management, human resources, logistics, trucking, warehousing, design engineering, customer service and quality control. In other words, all areas where time is used up with no payback.

The Manufacturing Continuum

Manufacturing, as ‘the manufacturing continuum diagram’ shows, is the thinnest slice of the process because in the past 20 years smart managers have taken much of the waste and labor out of the process. The current focus on lean manufacturing is an obsession to drive waste and layers of complexity out, to strip it down to its bare essential processes for what is to come. This leaves little room for change.

And to add to this challenge as manufacturing grew from semi-automated textile mills to Intel’s clean room and robotic plants, various separate management areas developed their own non-communicating systems, philosophies and metrics.

These pieces need to be reintegrated into a technologically complete process. They offer wide-open and unique opportunities for innovation and custom, intelligent solutions that manufacturing innovators have not developed.

You must accept the inevitability of lean, perfect, agile, laboratory-like manufacturing processes. You already know how to do this. You probably know how to layout efficient lines, how and when to introduce automation, and in what degree. You know how to select and develop and train and motivate your workforce.

In the 2020 enterprise, functions like order administration, product development, and cash farming will blur into a single order communication process. Every bit of information that can be maintained for correct billing and product specification will be transmitted electronically in parallel to actual material processing.

What is missing is ‘Easy Excellence’. This is where the technology machine can take you to previously unthought-of levels of performance at unbelievably low costs.
The Technology Machine

Technology and knowledge are the drivers in manufacturing, because technology creates wealth and fuels growth. Technology, or machine intelligence, combined with individual excellence and integrity, will rule the future. What you need is a guide to the accelerated changes in manufacturing and technologies and the people that will drive them.

In the coming decades, manufacturing professionals will be technology partners, rather than servants to the machines. The future is about smartness, values, supreme technical mastery and constant innovation.

Islands of Excellence

In the year 2020, there will be two types of enterprises, the Island of Excellence and all the rest. The Island of Excellence organization will do many things extremely well such as manufacturing, real-time customer design of product and simultaneous production or customer fulfillment. The workforce on the island will be very special – specially selected, trained, motivated and aware of their position as an elite corp.

Forget mission statements stuck on the wall. Instead imagine each member of this special island experiencing a 2 year apprenticeship, a member of this special island experiencing a 2 year apprenticeship, an apprenticeship.

On the other side of excellence are a group of people you may as well call the living dead. These people have spent too many years in a war zone scrambling and kicking, trying to recapture the focus that will lead them to excellence. But, chances are, it won’t happen, they are too worn down.

It’s your choice which enterprise you will belong to.

The Vision for 2020

The challenge is to form a new vision for the entire enterprise. That vision reaches beyond manufacturing excellence into 3 key areas:

1. Value-Chain Excellence
2. Organizational Excellence
3. The Knowledge Worker

To do this will require many hands but only one mind. The technology machine provides the muscle and the brains to do this.

“In summers past, the living in the high-tech industry was, relatively speaking, easy.”

S. Russel Crain

Visionary Leaders

Visionary leaders – mavericks of sorts who stepped out of line bringing a mirrored organization with them – are creating the 2020 vision. The best technology companies are headed by people with wisdom, ethics and a strong management style. These visionary leaders may not be perfect but they do have huge strength and forcefulness.

Their vision will be what yours should be. To have achieved excellence in customer fulfillment. And to create an entity that transforms customer needs instantaneously into perfect product.

Knowledge Workers

In the year 2020, some workers will be rewarded for patient and deliberate skills acquisition in a number of complex and challenging areas such as languages, design and database use, simulators, partnering and cross-enterprise communications skills, as well as specific and changeable technology-driven knowledge.

Knowledge workers, many of whom will not carry very descriptive or long technical strings of titles, will inhabit most 2020 companies.

The basic knowledge-worker will have the following characteristics:

1. Technical base
2. Communications
3. Creativity
4. Ethics

As we become more dependent on partnering and enterprise activities, ethics will be more important. A person’s reputation will travel with his technical portfolio. Ethical transactions in 2020 will extend beyond issues of business etiquette to technology management and group loyalty.

In the year 2020, there will be winners and losers and the spread between the growth companies and the stragglers will be huge.

Significant technology advances will restructure entire industries – automotive, plastics, aircraft and personal transportation, communications, genetic engineering, education and entertainment will experience such significant change that the contrast will be very clear.

Technology Mindset - How Times Change!

20 years ago people couldn’t believe that one day technology would go further than it was then. Here are some examples:

“Windows today is like Cebol was 20 years ago – very persuasive, but not something you would want your kids to learn.”
April 1999

“640k ought to be enough for anybody.”
Bill Gates, 1981

“There is no reason anyone would want a computer in their home.”
Ken Olson, 1977

“There’s a world market for maybe 5 computers.”
Thomas Watson, 1943

“Heavier than air flying machines are impossible.”
Lord Kelvin, 1895

Wild Cards: How Technology Will Change The Future

A wild card is a technological breakthrough much like the Toyota Production System (TPS) which in less than 10 years revolutionized global production and material delivery processes.
The following wild cards, like TPS did when first introduced, will stretch your imagination. And, be warned: they may even seem a bit nutty. You may not agree with some of these wild cards but, as you know, it is the future that deals the cards, and the best you can do is play them.

1. **Small Unknowns will be the Winners.** Social structures and communications will be driven by technology. The 2020 winners will be small unknowns, or unheard of organizations. These new industries will thrive on compact data structures. The 2020 losers will be big, insular companies in the United States and Germany.

2. **Mass Manufacturing will be Lost.** Mass production will give way to fully distributed manufacturing and point-of-sale manufacturing. There will be companies that will gear toward localized sourcing and production and recomposition of recyclable materials.

3. **Everything will be Personalized.** Watch for personal transportation industries, personal health, and personal security and entertainment ideas to ‘customize’, dominate, replicate and die, all in less than six-month spans.

4. **Recycling: Franchised and Catalogued.** Junkyards for cars, appliances and computer equipment have pioneered the recycling movement. They are now electronically catalogued and franchised. You no longer need to pick through bodies of rusted cars to find a car part. The exact location of that assembly is available on-line and the parts are cleaned and shelved for quick pickup and display.

5. **Ideas: your Currency, Time and Only Copyright.** Intellectual property law will boom and dominate internet exchange and all other information media. And intellectual capital thrives. The most important commodity of intellectual capital will be people, certain types of people. PhD engineers and brilliant software and design gurus will take positions of management and corporate direction.

6. **Commodity, Commodity, Commodity.** Commodity swings will drive system swings. When Honda pioneered the aluminum engine, the weight of steel and steel transport issues dictated the new material’s use in engine design. Even though the first Honda aluminum engines failed, further attempts were made to perfect it. The competitors changed their technology within 5 years to aluminum casting. In 1998 the Oldsmobile Aurora engine – all aluminum sump, block and head – became the Indy racing engine of choice.

7. **Ideas will Dominate.** The alchemy that creates effective applications from thousands of good ideas is the key element for growth in the next two decades.

8. **Mid-Sized Companies will be Lost.** In manufacturing, survivors will be very large, non-distributed enterprises and small boutique firms. In full-blown competitive markets, size reinforced with cash and innovation brains will battle extended enterprises formed from small, fast companies.

9. **Crab Skin will be Grown for Equipment.** Like what exactly? Aircraft. Skis. Tennis equipment. New lightweight materials will change the way we design skeletal structures. Steel and other metal parts will be manufactured in three dimensions to make hard non-prototype steel-centered materials and made from organic materials like crab skin.

10. **Dilbert Rules!** Aerospace engineers and repairmen will be in high demand (and paid accordingly). Satellite manufacturing, ground support, antennas, and communications and control will be big business.

11. **Time Travel will be Real.** Accurate simulation models, like Sim City, that transport users into alternative lives, will be more abundant.

12. **Outer Space Manufacturing.** Onboard space manufacturing using solar power and high-bandwidth communications will extend the boundaries of previously earthbound production. Manufacturing sectors and electronic industries will eliminate hands-on labor costs.

13. **No Hands Manufacturing.** Computers and intelligent systems will manage manufacturing to eliminate hands-on labor costs. Manufacturing, advanced planning and scheduling will be conducted on the Web. Big cost and speed opportunity areas lie in logistics and design to solve customer hyper needs. Manufacturing productivity standards will increase to the point where customers will contract for standard production costs.

14. **No Traffic Jams.** Expect the end of the commuter traffic jam, because people will live where they work and work where they live, in factory villages much as they did at the beginning of the Industrial Revolution.

15. **Television will be Dead.** Downloads and uploads through internet will produce customized entertainment. Everyone from the age of six months on will wear a “Batman utility belt,” chips for power, memory, lifetime medical and education records, and enterprise documentation.

16. **Computers will be Ten Thousand Times More Powerful.** Software will be dead – embedded intelligence rules. And people (including babies) wear personal ‘Batman utility belts’ with chips for power, memory, lifetime medical, education records and enterprise documentation.

17. **Smart Tool Overload.** Nuts and bolts will be replaced with glue and plastic and one-piece molded structures. Laser welders and cutters will be home tools, not just heavy industrial tools. Everything will be smart! Organizational structures will continue to undergo massive redesign. Unions and guilds will erode to the point of invisibility.

18. **Ethics Count and Everyone Knows.** Integrity and value systems will determine enterprise and individual success. Demands for quality time continue to grow. Plastic Welfare will buy everything from food to houses and cars.

19. **Drugs and Plastic Surgery a Norm.** Drugs will replace cultural boundaries, church and families. They will be available for every possible human condition and situation. Drugs will control everything teenagers and average workers do. There will be drugs for health, stress, weight control, pain and general happiness. Both drugs and plastic surgery will be widely used by the poorer classes and the super rich.

20. **Biotech Lifestyle.** On the day of your birth and your registration, your DNA scrapings will be catalogued for the ‘Spare
Parts Bank’ where cloned organs and tissues can be reserved just for you.

21. Wal-Mart will Win. Volume product design, assembly, and sales centres win over high-cost specialty stores. There will be portable power generators in the form of fuel cells, batteries, mobile, backpack cells, heart implants, lamps and miniature gas turbines.

22. Bid the Net. Jobs, stocks, airplane tickets, books, custom clothing, wives, kids, drugs and gurus will be negotiated on the Web, paid for and delivered via the internet.

23. Microchips will be the New Virus. Every person now in the United States owns on average six microchips. In 2020, that number will rise to ten thousand micros per person, embedded in every saltshaker, every credit card, light bulb, shampoo bottle, paperback book cover and air filter.

24. Bandwidth Communication. Bandwidth compression techniques will reduce the need for other communications vehicles. Adaptive sensors will replace periodic diagnosis or maintenance.

25. Hybrid Computers Run Our Lives. New forms of computers will come into existence, including quantum mechanical computers, biological computers and optical computers. Voice recognition systems will dominate computing, banking, security. Computers will model human social organization and behaviour. For example, traffic flows and crowd control. Complex adaptive systems and intelligent agents will run roads, airports, banks and other dynamic operations.

26. Entertainment-based Info Tech. Information technology will force and enable change; although users will specify needs, information technology will deliver those needs. Technology that starts its commercial life as entertainment will move fastest. Privacy and security systems will be available to most users. Computer hackers will increase; a few episodes of computer terrorism such as blackmail and theft will shut down utility systems.

27. Only 2 Hours Away from Everywhere – For All. Global citizens will be two hours to anywhere. Citizens with the means will form complete walled cities, corporate city-states and citizens without the means will find themselves on their own trying to establish their own little cities, clubs and entertainment styles.

28. Spiritual Leaders in Uniforms (Good and Bad) Reign! There will be decisions made for the greater good of the people and the maintenance of workers health and infrastructures. Spiritual leaders will appear in each new entity and not all of them will preach positive approaches to human growth. Uniforms and things such as hats, flags, songs, salutes will return.

29. Transport on Demand. Transportation companies will give the go ahead for special-use vehicles, off-road vehicles and small construction and road-building equipment. The U.S. interstate highway system will create high-speed lanes to service the next generation of vehicles. Air transport systems will restructure by using smaller and faster jets.

30. Big Brother Will Control. Genetic engineering, drugs, selective education and entertainment will be used to control the behavior and mind of lowest classes. Big Corporate Power will replace government power. Governments will support corporate growth by facilitating communications, data gathering and labor rules.

31. Robotics Globalize Health and Money. Nanobots will facilitate disease diagnosis, health maintenance and body repair. Stock exchanges will not exist anymore. They will be replaced by rich databases and global exchange.

32. Hand-Make It Instead. Hand made items will be much more in demand as opposed to machine mass-produced items. Research and Development projects will run the technology machine.

33. Work from Home and Eat Microsources. New organization structures will reduce the number of engineers required to design products. Smart appliances will prepare smart foods. 80% of our food will be prepared as microwavable meals. There will be more people working from home or movable offices. Homes will be modular and agile. Furniture will be easy to assemble and reassemble and movable. So will the offices. Manufacturing will also be agile, movable and easy to relocate.

34. Designer Babies will be Controlled and Risk a Must. DNA and aptitude testing will vector kids’ future professions and interests, starting at age three. The companies will do more and more analysis and the results will be less meaningful. By the year 2020, the technologist will take charge of which technology tasks must be done and where. There will be more money demanded by venture capital and more investment will be made and more risks will be taken.

35. Bring in the Fat Supermodel. Fat will be in and thin will be out, announcing the emergence of a well-fed global middle class. Any food will be modified to resemble another food to please regional palates. Nutrition and aesthetics will combine to create a new food industry.

36. No Trust Available. Managers and leaders will need security aids to determine if they can trust the customer on the internet.

37. Make it Quick – Mistakes OK. In 2020, with different materials and very fast fixes for quick turnaround, we will do a slap and fix for a survivable and near-optimum solution. Books will be done this way – type it now, fix it later, versus pencils and whiteout and months of thinking and planning.

38. Multidimensional Computers. Databases and computer search engines will be multidimensional and will allow simultaneous quick search and analysis. Faxes will be 3-D. Marketing and product development will take into consideration the other senses and aromatherapy will play a great role in product design.

39. Multidimensional and Biodegradable Cities. Traffic noise and airport noise will be monitored and controlled. There will be cars without drivers. There will be more bio-degradable products, bottles, cans and cartons that dissolve back to the soil. Paper production will increase. There will be mile-high skyscrapers.

40. Old Diseases Return and AIDS is Cured. Some societies will refuse to be immunized and this will cause the increase of measles and other infectious diseases. The cure for AIDS will be found and they will discover that HIV is not the root cause of the disease. Leaders will continue to demonstrate the DNA imperative of clan leadership through spectacular sexual performance. Computer science, networks and health care will be the fastest growing professions.
Avoidance and Technological Denial

If you think that change is the thing that only happens to the other guy then you may be in for a rude shock. I know it can be easy to think you will somehow skim by, tweak a little here, add a machine there and somehow make do. But, in my opinion, this is a very dangerous assumption.

We are in the midst of a technology tsunami and I’m sure you know your chances if you get in the way of such a force. Don’t take the risk. My advice to you is simple:

Historical Quotes - Don’t Believe All You Hear

“The ‘telephone’ has too many shortcomings to be seriously considered as a means of communication. The device is inherently of no value to us.”

Western Union Internal Memo, 1876

“Computers in the future may weigh no more than 1.5 tons.”

Popular Mechanics, 1949

“I have travelled the length and breadth of this country and talked with the best people, and I can assure you that data processing is a fad that won’t last out the year.”

Prentice-Hall Editor, 1968

“If people do not believe that mathematics is simple, it is only because they do not realize how complicated life is.”

John Von Neumann, 1903-57

“Plan on putting yourself out of business.”

12 Rules of a Technologically Smart Enterprise

We’ve worked in old companies and launched new ones; we’ve survived hula-hoop management and enjoyed enormous technology successes. And we have decided that the following are the rules about how to run a technology-smart enterprise:

1. Hire top people.
2. Have strong leaders.
3. Deliver the messages from on high.
4. Have a lot of competition in the market.
5. Ship the products.
6. View work as the reward.
7. Advocate complete local control.
8. Form small groups of no more than 7.
10. Use measures of performance.
11. Keep outsiders out.

But these golden rules can be further reduced to a memorable 5:

1. Be the dumbest person in the place. Research has shown that when evaluating leaders of a company a PhD is a negative and bankruptcy is a plus. These challenging experiences develop maturity and valuable skills that are essential to an organization.
And when you create an organization, hire people who are specialists and smarter than the top manager, founder, or entrepreneur.

2. Have the best tools.

3. Stay focused.

4. Don’t pay very much. When is failure a guarantee? When an employee works just for the money. Good work is its own ultimate reward – no successful company ever made it just for the money they could gain. Sure, money helps, but it won’t guarantee spectacular results because the driving ambition of the successful enterprise is a passion to show the world the right way to do things.

5. Tell them when they are done. When the project is over, declare it over and move on. Movement is necessary.

Planes That Fly Themselves

Imagine an airplane that flies itself, making adjustments completely independent of human control. This is an example of the approach being used today to embedding intelligence in individual entities.

Granted, the craft would need to check in with a control tower to announce arrival or a location, but imagine this same intelligence imbedded in cutting machines and all other types of factory equipment making a factory almost hands free.

If we would only stand back and think we will begin to see the scope and possibility in the manufacturing universe.

Standardization of Work Processes

Standardization of work processes is the biggest permanent change enforcer. Without standardization things start to slip back into the old familiar work habits that disrupted work flows and brought complexity and unpredictability onto the floor in the first place.

Jim Womack, co-author of The Machine that Changed the World and Lean Thinking, believes that the issue of standardization is one of the biggest barriers to successfully rebuilding out-of-control processes and keeping them that way.

So how do you improve this? There are now many examples showing that a rigorous process of what Mr Ohno of the Toyota Production System calls Kaizen (meaning ‘to make better’) is the answer.

This kaizen process, implemented systematically, is a powerful tool. Coordinated kaizen activity will result in removing waste, getting ideas from empowered work teams and a general straightening up and cleaning of all processes.

However, more importantly this activity is meant to change and improve technically challenging processes without the continued reliance on engineers and technicians.

Learning Kaizen from the Great Teacher

Teruyuki Maruo explains that he was trained as a young quality engineer to think carefully about all material use; scrap usually
Think only about the work. It is the only You get zero points for just

Live the trade. You can do nothing less. Be loyal.

Work with the best tools, whether they are computers or brushes

benefits!

about anything except stopping.

attack.

inspired adolescent in town. Store up your bag of tricks and

the customer. Go fast, be hungry, and act as if you're the oldest

have an angle”. Magic and flash generate confidence in you and

technology manager a professional. Apply them

There are 6 disciplines or virtues that make an engineer or

different, and you must learn to adapt behaviour to the task at

you resolve it.

Temperate Habits. Recognize and correct bad habits. Every task is
different, and you must learn to adapt behaviour to the task at
hand. The idea is to take risks, make mistakes, and experiment.
Correct Behaviour. Individual behaviour patterns determine overall
performance.
Magic and an Ear for the Ineffable. You get zero points for just
doing a good job. As an NBA coach once said, “Everyone’s got to
have an angle”. Magic and flash generate confidence in you and
the customer. Go fast, be hungry, and act as if you’re the oldest
inspired adolescent in town. Store up your bag of tricks and
attack.
Dedication. Live the trade. You can do nothing less. Be loyal.
Work with the best tools, whether they are computers or brushes
or people.

What Makes a Manager a Professional

There are 6 disciplines or virtues that make an engineer or
technology manager a professional. Apply them now and reap the
benefits!
Physical Rectitude. Stay in shape! Exercise until you can’t think
about anything except stopping.
Moral Forbearance. Think only about the work. It is the only
thing worth thinking about. Work a problem over and over until
you resolve it.
Temperate Habits. Recognize and correct bad habits. Every task is
different, and you must learn to adapt behaviour to the task at
hand. The idea is to take risks, make mistakes, and experiment.
Correct Behaviour. Individual behaviour patterns determine overall
performance.
Magic and an Ear for the Ineffable. You get zero points for just
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Work with the best tools, whether they are computers or brushes
or people.

Another Look Into The Future

The challenges of process control and manufacturing are complex
to say the least. But there are answers to be found by exploring
innovation in systems that are and will further become the brains

When you look at manufacturing closely you can see it is at a
crossroad. And the new path to take involves computers and
industrial automation with the goal to make manufacturing more:
1. Decentralized,
2. Asynchronous,
3. Agent – based and managed, and

All four of these systems can be found in the natural world. Just
look at the way flocks of birds self-organize.

Movement Towards Meta-Systems

Without a doubt the biggest change in manufacturing will be
created by software. From the web to Manufacturing Execution
Systems, all the big changes are coming from this infotech area.

Many people see software simply as an art form. However the next
20 years will see it transformed into a productivity, management
and quality discipline.

The Human Element

To have truly lasting and effective change the managers of
tomorrow must be able to work with whole systems not just
components or slabs. What does this mean? Well, they must be
technology experts as well as human behaviour gurus.

With the understanding that software products are becoming a
part of every machine in every factory and that by working with
behavioural aspects they can, by using these combined techniques,
manipulate and improve their organisation like never before.

Technology creates wealth and jobs and more technology. It is the
only road to true wealth. And wealth means freedom of choice.
Sometimes when technology is used under bad management it
creates complexity. Manufacturing professionals at all levels must
understand that there are technology winners and losers.

The 2020 managers will build and manage and occasionally unplug
the machine, the machine will no longer control them. Non-
technical managers are not ready for the advanced design and
communications and process technologies. In short, technophobes
are doomed!

8 Criteria For Technology Proposal Evaluation

Any technology proposal, project proposal, or technology risk
should be evaluated against the following criteria:
1. 10X Performance For a product proposal to be worth
developing, it must be 10 times better than anything currently
available in some element of its functionality. For example, the
price of your new PC offering must be 10X lower than your competitors, or the performance must be 10X higher.

2. **Seven Years** This is the time between the brainstorming of the conceptual design and the final goal which could be any form of business success. A Porsche, positive cash flow, or a significant venue?

Further to this, any seven year project must be managed into 3 year segments over its total life span.

Remember; if someone asks how long a project will take remember to tell them:

**“Every project takes 18 months and a million dollars”**

3. **Three Gurus** This is the amount of smart people needed for any project. All R&D projects need to be managed by small teams with clearly defined goals.

4. **100% of the Market** You must have a target to have 100% market dominance. Anything less is a loser’s strategy. This goal must become so clear that it becomes your team’s bumper sticker: ‘100% or bust!’

It’s also important to be asking the right questions at the beginning of the project. “What do people need?” not “What should we make?”

5. **The 5 Legged Dog** These 5 legs are: Management, Marketing, Production, Money and Technology. All of these elements must be represented in every project.

6. **Three Rounds** Always remember that when it comes to venture capital any more than 3 solid rounds of money advanced to a good startup is not recommended.

7. **Folding is Important** Zero risk ventures cannot return large value. The suggested target for R&D failure is 50%. So choose each project for a 50/50 likelihood of failure to increase the return on the entire R&D investment.

8. **Passion** To have a really good company you must accept that you will never have a truly perfect company. So go in the direction of improvement and understand that the landscape underneath you is changing.

Once you have the group of possible projects ready, and the checks are written, management is next. Morley’s Rules on technology management work.

**Morley’s Rules on Managing the Investment Relationship**

As the original members of the Breakfast Club, Morley and partner George Schwenk have their hands in about 30 companies that are active today. Their involvement ranges from active participant to passive investor.

Breakfast club members don’t invest in businesses, they invest in people. They look for very smart people with very high integrity. They believe that the following are important points and rules on managing investment relationship.

1. Think before you jump. How involved do you want to be?
2. Beware the 50 percent hang-up. Be aware of the fact that in any venture your rate of success is 50%.
4. Get a real board of directors to run your enterprise.
5. Pitch in when you can really help.
6. Patience, patience and more patience. Developments take a long time to reach the desired goal.
7. Everything cycles. All investments follow a natural cycle.
8. Exits aren’t clearly marked. When you want to exit from a project there are no clear signs to tell you where to exit, you have to figure out the exit yourself.
9. 100% of 0 = 0. If a project is a failure don’t insist on continuing to develop it, just finish it before it goes further than necessary.
10. There aren’t any free lunches. Nothing is for free, there’s always a certain price to pay for your needs.

Reality counts. Every company is in bad shape, but if management can fix one problem, and then tomorrow fix another, soon there will be a good company. All investments follow a natural life cycle, and you must plan on your company aging. When the companies are young, they must be fed well. But when they age, they should have developed wisdom; they should create jobs, turn a profit, and return their gains to society.