



I participated in a small expedition to Everest North Face, advanced base camp, 6500 meters (21360 feet). Follow this link for more information about this adventure: <http://everest6500.com>

Returning back to civilization I found many "how r u" messages.

They were handled with the simple "alive" answer.

Then, there was this strange message...

The message came from the address autodistribution@2100archive.fu. The subject was "Unclassified: Based on events of 2040". The content included a very brief message and an attachment.

"The attached information was extracted from the Complete Archive of Events 2000 - 2100. The analyzer system associated attached notes with several names including yours and prepared for auto-distribution. Be aware that classified parts of information were removed from the message."

Highly intrigued, I opened the attachment and started reading. My impression was that both, the beginning and end as well as some pieces in the middle had been cut, most probably as classified information. Nevertheless, the story was relevant to my work, confirming some of my ideas and expanding others.

Based on events of 2040: Psycho...

The presentation was over with no happy ending.

"Wait a minute. This is unbelievable! Did you show this report to anyone else?"

"No, you will be the first reader."

I looked straight at the presenter.

"What was your original task?"

"You can call me Psycho. Many people call me Psycho. It became my nickname.

My task was to research and report the reasons behind falling productivity on three major robot plants, so called modeling factories."

"And you think..."

"These are objective measures and the results of comprehensive conversational tests."

"Who conducted the tests?"

"I did. This is my specialty."

"And they admit..."

"No, there has been no intentional sabotage. No one understands why their performance indicators are lower. They do not have enough data to see the big picture. And some of them show significantly increased performance. But this is a minor deviation from the major trend. "

"So, it is just your personal conclusion?" I was not happy that I asked that question, but it was too late.

"The conclusion is based on the six-month research and statistical analysis. "

"What do you suggest?" It was against the rules, but I wanted the answer.

"You know, you cannot use my recommendations. At this point I have none. More questions?"

He was right. There were many rules against questioning a reporter. Especially in this case: the reporter was not a human. But I did not expose my knowledge and continued to question my visitor.

"No... Except one: who gave you this assignment?"

There was a minute delay – "This person is no longer with the company and I cannot access his name and other personal data."

That was somewhat strange. People freely entered and left the company, and their data usually were available with rare exceptions.

"Thank you! I think we are done here."

His image immediately disappeared clearing a beautiful view of the mountains. It was Everest North Face. The giant pyramid looked steep and proud on this unusually sunny day.

I opened the report. The title was "Collaborative conflicts in robot teams."



Based on events of 2040: The Report...

The report started with the history. Designing and discussing robots were hot subjects for decades. The discussion about human – robot collaboration and wars brought high hopes to some and scared the others. Meanwhile, the robot skills steadily expanded human capabilities, especially in environments hostile to humans. In most cases, people and robots existed in different dimensions with no ground for any possible conflicts. Nevertheless, every robot action was always checked against the “good for people” rules.

Overtime, the dust settled, giving way to more practical questions. Should we invest in universal “super” robots or combine specialized robots into teams? Designing robots for multiple areas, providing connections to the knowledge domains, and engaging in the conversational study with the best world minds seems to be necessary, although long and expensive.

Very soon the robots learned how to help us in the education and testing processes. They actually created new test sets and compared these with existing ones. They improved educational materials and provided more individual skill-based layers. They introduced better evaluation instruments that looked more like games than tests. These games helped to precisely measure a student’s disconnect at each point of study. Robots constantly learned and tested themselves. They never cheated. Some people said that robots cannot lie and others said that robots lack imagination.

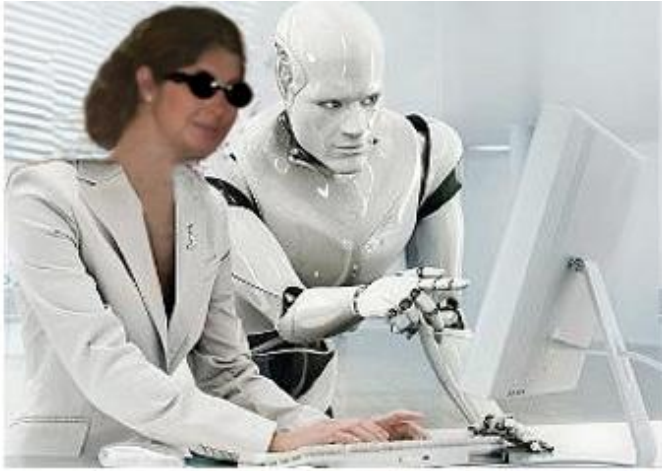
Most “super” robots became teachers, passing their knowledge to other robots and also teaching in the regular virtual schools. They were extremely successful with children. Their enormous knowledge and quick thinking, their ability to replicate their custom copies while gaming simultaneously with multiple participants, and most importantly their lack of emotion contributed to their success. Robots kept their cool in the kinds of situations that would drive a human teacher crazy.

Verbal interactions and situational games facilitated by robots helped us solve at least two problems. Parents had their break when they needed it, while children still enjoyed undivided attention in a highly educational and comfortable environment. Kids loved it and the price was right too. This was the first opportunity to start early childhood education for the whole planet with a coordinated cultural program under the UNESCO umbrella. UNESCO subsidized the program with the “Peace for Our Children” fund. Very few people knew about the non-stop internal fight between the program donors, Localists, who pushed for local inclusions and Globalists who insisted on complete unification of the curriculum. Nevertheless, the program was instrumental in increasing knowledge and understanding among the world’s youth as the best protection against violence and wars.

But education was the only area where super-robots made sense. In all other areas they were too expensive for what they were doing and their payoff or “return on investment” was very questionable. Creating specialized robots and their growing teams became the mainstream of robot development.

Robots were made from materials and in shapes which fit their purposes best. The modeling factories which designed and built custom robots and teams grew into the largest industry. After starting in the technologically advanced countries, these factories slowly spread to the more remote parts of the world, repeating the usual process of maturing technology. Modeling factories grew out of 3D printing, as people first called it. From replication or printing, they moved to modeling and creating new things,

streamlining the manufacturing process and making it available to the average person. What we used to call design and development was transformed into a direct conversation between a person and a modeling factory. Initiated by a person and lead by globally connected specialized computer systems, these conversations clarified the initial ideas, modeled and manufactured the desired product.



Large modeling factories produced smaller modeling factories, highly customized for the clubs, restaurants, and private homes.

For example, almost every woman had a custom modeling factory that looked like a big old mirror, but produced clothes that fit her style and size.

Of course, it was necessary to upgrade or change these factories to catch up with the fashion changes.

Men focused on modeling food, drink, and transportation. Fancy robot plane with a mix of bio- and nano-engineering, could be created by individuals, but belonged to the clubs, which took care of safety as well as other aspects of life in transition.

Federal law highly restricted the usage of man driven vehicles (MDVs) to remove human error out of the transportation equation. This encouraged new travel plans and models. For example, a submarine combined with a flying saucer became a perfect vehicle to explore deep spots of Pacific Ocean and Himalayan heights in a week-long tour.



The three biggest modeling factories were located in the Sahara desert. Thousands of robot teams consumed local silicon, sun, and natural bio resources, transforming this complex mix into final products. The modeling factories were connected and shared their specialized skills and knowledge. Some of them had access to and could occasionally call subject matter experts. Sharing was never an easy procedure, sometimes involving multiple companies in dynamic negotiations over the features, time, and resources. Of course, it lasted milliseconds and was completely hidden from the end users.

Over the years, the productivity of the factories steadily grew ... till the last year. Last year all three biggest factories seemed to slow down their progress. It was not very noticeable, but apparently some highly positioned executive at our company ordered a special investigation. This unknown person left the company and the name mysteriously disappeared. Anyway, this investigation was assigned to a specially designed "super" robot with the ability to collect and analyze all communications between the company's robots during the year. The super robot was also highly skilled in the relatively new field of robotic conversational psychology and actively used its methods during the analysis.

The report landed in my hands. There was no way to avoid this subject at the next management meeting, although I felt very uncomfortable and unprepared bringing this bomb to the meeting room.

I looked at the window. There was a minute of clearing when the summit of Everest came out of the clouds. The goddess mother of Earth, Qomolangma, as Tibetans and Nepalese call the mountain, was not in a mood.



Based on events of 2040: The Meeting...

So far I've heard little and understood less. The president's face was pale but apparently she was the only one not surprised by the summary of the report. The group discussion started immediately. As usual, we split into small teams. This kind of parallel processing had other positive effects. Working in small groups, people tended to be free and open coming up with more innovative ideas than they would have in the larger group.

I was with the president and the chief psychologist. I kept silent, but no one seemed to be paying to me any attention. – "This is no one's fault" - said the psychologist, - "No one could have expected anything like this". The president closed her eyes for a moment and said in a very quiet voice: "Provident warned me that this might happen. I did not believe him. He ordered this investigation without my permission". – "Without your permission? What did you do to him when you figured this out?" - "I was angry. I kicked him out of the company."

So, it was Provident. One piece of the puzzle was uncovered. No one had liked this strange guy. He would ignore some meetings and appear unexpectedly at others. In the middle of a discussion he would randomly announce something that made absolutely no sense at the moment and then leave the room without answering any questions. The most annoying thing about him was that a lot of his impossible announcements sooner or later became reality. There was a rumor that he is a cyborg, a mix of a robot and a human being.

In the scientific circles, Provident was known as the father of robotic psychology, which had only recently attracted the attention of the business world after a decade of work done by Provident and two of his students.

The president turned to me: "What do you think about this report?"

I hadn't expected the question and almost fell off the chair. "You know, I am not sure if we can trust it. I have a suspicion that the reporter is also a robot. There could be some hidden motives." I paused. "Also, the report stated that we have moved beyond the turning point. I am having a hard time believing that." "So, what do you suggest? Wait and see? Any constructive measures?"

The psychologist jumped in. She argued: "You know that robots do not lie, right?"

"Yes, that's common knowledge. But I guess this report makes our common knowledge questionable."

The chief psychologist looked at the president and said, choosing her words carefully: "We've learned a lot about competitive and collaborative behavior in people's teams and we've improved teamwork culture in the past decades. But according to the report, all of this might not be applicable to the robots."

Based on events of 2040: Competition and Collaboration ...

... The chief psychologist looked at the president and said, choosing her words carefully: "We've learned a lot about competitive and collaborative behavior in people's teams and we've improved teamwork culture in the past few decades. But according to the report, all of this might not be applicable to the robots."

I knew I could trust her. Two decades ago, Monica had written a book on the subject of competition and collaboration in human life. Starting from the beginning of civilization, the book considered social and work activity via the prism of these conflicting aspects of human behavior. The book made a significant impact on the society. Omitting a lot of details and with great simplification, I'll try to outline the main points.

Competition is a natural way of survival behavior for all species, human or not, in environments with the limited resources. Evolution theory supports this view: species less suited to compete have to adapt or die out.

On the other hand, collaboration is about sharing resources and working together to achieve common goals. This might sound like a higher level activity in complete opposition to competition ideology. But let's take a closer look. In the most cases collaboration is a component of competition between groups. While individual competition drives change and innovation, collaboration increases stability of groups and puts less emphasis on individual achievements.

Through the history of civilization, men have usually played more competitive roles than women. The book mentioned steadily growing number of women who participated in the workplace and suggested another major step: women might be better managers than men. The book argued that, genetically, women have the ability to multitask and prefer collaboration over competition. Men, on the other hand, tend to focus on specific problems and take risks in order to solve these problems. The book convincingly illustrated this point with the Gauss' curves, showing very different patterns of competitive and collaborative skills distribution for men and women.

Taken seriously by the business world, the book ignited a hot discussion, which transitioned into a quiet revolution in corporate management. A new generation of managers, mostly women, introduced a new leadership style, improving corporate culture and stabilizing the economy. Society followed suit and elected many more women to positions in government. The new administration drastically increased communications over multiple channels warming foreign relationships and business climate.

The government passed new laws slowly changing the rules of the workplace. One of the most controversial was the taxation of worker hours. The new rule removed all limitations and allowed workers to sell unlimited hours to their employers. For both: the employers and the workers, the rule established a normal tax for the first six hours of work and double taxation beyond this time. The worker time taxation rule made long hours a very rare case, as it was not profitable for corporations and for the employees.

The dispute over this ruling abruptly stopped after the publication of a statistical analysis of the policy. The main benefit came as significant savings of health care expenses. The report listed several contributing factors: improved workplace safety and worker's health, a decreased number of sick days

taken and an overall reduction in family emergency cases. Also appealing to the public were side benefits such things as a decreased divorce rate and decreased unemployment.

All of this did not happen overnight. Ten years after the book publication, some of us were getting ready to celebrate “the age of stability”



Based on events of 2040:

The second law of thermodynamics in economy

Things did not happen overnight. In ten years after the book publication, some of us were getting ready to celebrate “the age of stability”...

I remember those peaceful days, weeks, months, and even years. But then some gradual changes in the economy became visible. Economy was slowing down, decreasing demands on products and services. The market reacted quickly and the corporate world started shrinking. First it cut back on R&D and then its overall employment budget.

The best explanation I found in the press was a long article titled “The second law of thermodynamics in the economy.” Simply, the law states that entropy in any system is always increasing unless special efforts are taken to prevent this natural tendency to disobedience, disorder, and chaos. Apparently, the recent efforts of our workforce were not enough to keep healthy economy. In a convincing chapter “Victory means risk,” the author of the article connected the level of efforts and their results with the level of risk taken by the companies and individuals. “It turns out that the recent corporate changes have reduced our motivation to individual risk and individual achievements. The economic interpretation of our so called “stability” is stagnation.” I did not finish reading the long list of examples provided in the article. The idea was clear. Limiting deviations from the average course, via governmental control, corporate “collaborative bureaucracy,” we consistently re-created short-term stability inevitably followed by stagnation.

New corporate management did not follow the crazy practice of mass layoffs at lunch on Fridays. Instead, acting in a collaborative manner, most of the companies offered the volunteering “cut your paycheck” options. It was probably the first time, when not occasional folks but all of society took the hit, making the hit not so painful for individuals. It was an interesting time when we discussed the positive and negative consequences of the new management mentality. We've learned a lot since those days.

I do not remember who first suggested “My Risky Deal Offer”. This could be a project or a business move offered by an individual or a group. The offer would have business details including investments by a caller and the match expected from a company. This was like a collaborative startup, where a caller would provide a significant contribution and a company would match some negotiated percentage to support the project. Our stability was disrupted by the avalanche of these “collaborative startups”. They worked days and nights and still most of them failed. But survivors brought great results and pushed economy back on track.

The modeling factories in the Sahara desert were among the best achievements of those days. Designed to scale, the factories consistently increased production for many years. The recent negative results and the report submitted by an expert in robotic physiology (also a robot) were completely unexpected.

The report stated flatly that growing production required more parallel processing. New features demanded by clients required more knowledge exchange between the robot groups, which in its own turn required more parallel processing. Each robot dynamically acquired as many processors as needed. There was no shortage in computer power. But massive parallel processing created an enormous amount of problems. Complexity of data synchronization, networking, multithreading and other expected and unexpected factors grew exponentially.

The biggest problem was not really technical, but more related to robot psychology.

People can ignore extra data. Specially trained people can ignore multiple disturbing factors. It does not mean they make good decisions, but they continue functioning at some level. Robots were designed for optimization. They have no motivation to limit their data flow by the “need to know” or other artificial rules. While people often tend to control information as their key to power and individual success, robots try to support other robots providing all information for cross-examination from multiple points of view. Working simultaneously with many knowledge domains opened new opportunities, but also created new dependencies, increasing the decision cycles and required resources.

The report predicted that modeling factory production will continue slowing down until they reach some critical point that we passed several months ago. This will result in a violation of the agreement between the company and the clients. This might be the end of the company...

Based on events of 2040: The response that comes afterwards

The report predicted that the modeling factory production will continue slowing down until they reach some critical point that we passed several months ago. This will result in a violation of the agreement between the company and the clients. This might be the end of the company...

"Any constructive idea? Anyone?" - This was the president. - Silence was the answer. She looked at me. There was the case in the past, when I suggested something that actually worked. Usually I was just good at asking questions and generating discussions. The president preferred keeping me close during the meetings like that. Although, no meetings like that have ever happened.

*I did not have any constructive idea and started with the questions to the psychologist.
- "Should we trust the robot's conclusion? Can we have a second opinion on technical and psychological aspects?"
"Taking into account our timeframe, I would say "no" to both your questions" - the psychologist smiled, and her smile was very sad.*

"Can we limit robot's collaboration by some self-adjusting rules? Or maybe go the opposite direction? Can we provide multiple knowledge domains in each robot, so less communications would be needed?"

- "We already tried new rules. It did not help, just created more traffic to measure and evaluate effectiveness of communications. Initiating multiple knowledge domains or making "super-robots" is prohibitively expensive". - That was our technical advisor.

Several people questioned how much we should trust the report. Could it be an intentional plot? What would be a motivation? Who can benefit from this scenario? The discussion made a full cycle and dried out. I did not want to believe in the conspiracy theory with the robots. My preference would be to think of the technical and psychological problems, trying to fight complexity with a simple solution...

- "Miss President, What could be the consequences if events follow the pattern suggested in the report?"

- "Public outcry will be immediately supported with new regulations "to protect consumer rights and regulate the modeling factories."

- "We will be obliged to uniformly follow the regulations regardless of circumstances."

- "All the changes we currently make on-the-fly would be approved by regulatory organizations."

- "This will significantly slow down or even kill the company."

The picture was terribly clear and real.

- "We might have a chance for a preventive action" - the psychologist seemed to recollect something important.

- "Sometime ago I had a conversation with Provident..."

- "Provident suggested an interesting plan of actions. I can describe the main idea, but we might greatly benefit from his participation."

I was always intrigued by their relationships, but Monica was the only person who had at least slightest understanding of Provident plans, ideas, and even whereabouts.

The idea was amazingly simple.

According to Provident's theory, corporations accepted regulations because they did not do any better without.

Regulations are usually a response to business pain points. The response that comes afterwards, when damage already done, restricting the business and sometimes even killing it, while trying to prevent the situation from the past.

Provident suggested a set of actions that could be more efficient, pro-business oriented, while looking more into the future, then into the past.

Analyzing past crisis and addressing new pain points should become a business goal for a company or an industry

A corporate business will announce a start-up competition on achieving the goal and allow initiating start-ups by any group or a person within or outside of the corporation

Business selects several groups and supports them by matching some percentage of the resources provided by the startups

Government will also support the startups by providing for each group a "super-robot" trained in multiple knowledge domains. While humans of different team rarely communicate their ideas, robots freely exchange information and help each other.

Provident expected tremendous return on investment, but as far as I know this was never done.

"This sounds interesting, but..." The president interrupted me: "This sounds like a chance.

Monica will connect you. Apologize before him and ask for help. He might like the opportunity to implement his ideas. Go, time is ticking." Monica slightly nodded. We quickly left the meeting.



Based on events of 2040: Provident...

"Thank you so much for accepting my invitation and coming to my place on such short notice. I have a great interest in your alternative approach to industry and government regulations." – It was the first time we had a chance to talk face to face and I did not know if this was going to be an easy talk. Provident looked at me and smiled. I smiled back, mostly thinking about his unusual Tibetan dress.

"You have a wonderful place. I am enjoying the view from your window.

But you might know that my approach was rejected and had no chance for implementation.

- Why? For one: making multiple teams compete sounds like wasting resources. And second: the best scientific minds anyway work in the research centers, right?" He looked at me if I was buying the arguments.

- "It is hard to dispute" - I said cautiously - "isn't?"

"Unfortunately many people think this way. But reality is different. A single person or a group with all good intentions makes good choices about 50% of the time. Statistics shows many cases of missing right technology turn and going to the point of no return. Multiple competing lines seem to be more expensive but long run they are more efficient.

Competition is the necessity. Not only from the perspectives of optimal choices. When we know that we do not have to compete, we naturally save our internal resources. Only under the competition pressure we really do our best. This is in human genes.

But it is quite different for robots. Robots always optimize their decisions. Competition is a foreign concept in robot psychology. Robots are natural collaborators. Helping each other is part of their optimization strategy. Robot's participation is an extremely important factor in improving competing group efficiency."

- "Now about the best scientific minds..." He smiled again. "With all my respect, most business tasks require not so much fundamental approach as real understanding of specific business cases. To contrast, restrictions and regulations lead to a "standard" set of actions regardless of case specifics, individual skills, and business knowledge.

A common problem is that people who better understand the business have less ability to express their knowledge. This is another place where robots will help with comprehensive conversational transformation. We do this in the modeling factories. This can be done for any other business. I am absolutely positive that the current opportunity is the winning case for this method and for the company."

- "I still could not connect the dots. I do not disagree with you about the robots and comprehensive conversations. You are right about transformations of business ideas into models and products. But this is different. Here we need to fix our production problem, which is not even understood so far. And where can we get the super - robots without the government support?"

He came closer and put his hand on my shoulder. For about a minute he stared at me. His gray eyes slightly change the color becoming silver-metallic shade.

"We will open our problem to the public and announce the competition. We will select 3 winning teams and then..." There was a long pause. - "Each of us will join one of the winning teams. The robot who brought the report is actually a super - robot. It might be no surprise for you that I am also a super - robot. And I know that you are a super - robot too."

- "Why do you think so?" – I expected something like this and did not blink.

- "No worry. People do not know. I had this suspicion for a long time. You live in Tibet in a small remote villa near Rongbuk. You could rent a great compressed-air room in one of prestigious hotels around Rongbuk. You would enjoy concerts of celebrities, acclimatization and massage sessions, and helicopter services. Instead you've built your own bungalow. You must be working 24x7 that time. Another strange

thing was your appearance on the company meetings upon a very short notice. I checked the flight schedules and passenger lists that days. Your name was not there. This means that you have your own flight mechanisms. Finally, I assigned a psychology robot to bring this report to you. Psycho is very sensitive. He came back to me and confirmed that you must be a very strong super - robot. From this close distance between us I can also feel extremely high energy resources hidden in you. Now you can unblock your processing for me, so we can share."

He looked at me. I continued watching him. He was not smiling anymore."Robots are not good at communicating with people" – he said slowly. "But you developed friendship with the key figures in the company, starting with the president. Maybe you are..." I did not let him finish...



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