

M. Nobel

THE DYNAMITE KING AND THE RUSSIAN ROCKEFELLERS – ALFRED NOBEL AND HIS TWO BROTHERS.

Unique historical materials based on the recollections of family members of Alfred Nobel are given, which highlight its establishment as an outstanding entrepreneur, the vital interests and predilections of Alfred Nobel, which ultimately determined the choice of the nominations for the famous prize are also listed. The remarkable fact that Stalin was in his time helping worker at Nobel factory is noted, the causes that led to the fact that Alfred Nobel did not create the family had been analyzed.

Keywords: *entrepreneurship, partnership, Nobel Prize nomination.*

The name Nobel has been found in studies to be one of the most widely recognised names in the world today. The reason for this is of course the Nobel Prize. But also Alfred Nobel, the inventor of dynamite is universally recognised. Much less is known of his family and his two brothers who in their own right were as inventive as he was but who had the misfortune to choose the wrong country for their work.

The family Olufsson, known from the 16th century, were farmers in a small village named Nöbbelöv in Skåne, the southernmost part of Sweden. The Olufssons still farms the same land today. The Nobel family started with Peter Nobelius who took his name from the village and became a district court judge in Uppsala.

There he met and married Wendela, daughter to Olof Rudbeck; rector magnificus of the university, called the Leonardo da Vinci of the North and changed his name to Nobel.

Rudbeck was active and proficient in an astounding number of fields. He made significant discoveries in physics, chemistry, education, biology, history, medicine, and fine arts.

He constructed beautiful buildings, renovated entirely the university structure, he discovered the liver's lymphatic vessels in anatomy, he was Sweden's greatest botanist after Linné, he painted, composed and wrote books among which the most famous was the "Atlantica". In it he tried to prove that Sweden was the old Atlantis and the original cradle of all civilisation and I, as a Swede, of course thinks he was absolutely right.

Rudbeck's gifts and talents were passed on through his daughter to his grandson Immanuel Nobel, a dynamic inventor, energetic, sympathetic and multitalented but quick tempered and lacking in formal schooling and business sense. This sometimes made it difficult for him to distinguish between rash ideas and the commercially possible.

After a failure in Sweden in the building industry, Immanuel moved to St. Petersburg with his 3 sons in 1842, the land of promise at that time. An autodidact architect, a painter, which you will see from his watercolours, he started a mechanical workshop, which rapidly expanded. Among other things he invented plywood and set up Russia's first rolling steel mill and built its first propeller driven steamship.

The boys received a good private education. Already at 17 years of age Alfred spoke five languages and was fully trained as a chemist with a broad education in literature and other subjects.

Immanuel's wife Andrietta, Alfred's mother, stayed behind in Stockholm while her husband worked in Russia.

During five years, living in absolutely miserable conditions, she sold groceries and milk in a small shop in Stockholm, where she raised Alfred and her three other sons. A very courageous woman, according to her sons she never once complained about her situation. Alfred and his brothers actually sold matchboxes in the streets in order to survive.

Immanuel's greatest invention, apart from plywood, was the world's first functioning underwater mine, which he demonstrated before the Tsar and with which the Russians subsequently prevented the English-French fleets to reach the shore of St Petersburg.

In the mine, besides a charge of black powder there is an iron ball in a container. When the boat hits it, the ball falls down and crushes a vial of sulphuric acid, which blends with potassium bicarbonate, and the whole contraption explodes.

Immanuel's mechanical factory in St. Petersburg enjoyed a rapid expansion due to a rush of orders from the army but this suddenly turned into a commercial disaster when the Tsar died and the government simply cancelled all orders. Immanuel again went bankrupt and went back to Sweden; his sons, Ludwig and Robert, took over the business.

Ludwig, dynamic and intellectual, reorganised the bankrupt arms and gun factory. He received a huge order from the army to rebuild old muzzleloaders to repeat rifles. The Berdanka, as it was called, needed new butts in the process.

His brother Robert, a chemical engineer, was therefore sent to the Caspian Sea to look for walnut wood for these rifle butts but met a man on the boat who told him about his oil drilling experiences and Robert instead went to Baku, the oil production capital of that time in the Russian empire.

Gas and oil literally poured out of the ground in Baku. In the temple of the Zoroasters the fire worshippers, eternal fires are fed by gas streaming out of the pipes on top of the building.

When Robert arrived in Baku, oil drilling was very primitive. Kerosene was mostly used for lamp oil and heating, but the poor refinery process made it difficult to use because of the fumes and smoke it generated. The Nobel

brothers totally revamped the drilling techniques and Robert, being a chemist, improved the distillation process so that he obtained an almost pure and smokeless liquid. The Nobel Kerosene within a year saw its demand increasing fourfold.

When Robert came to Baku the cost of oil transport was several times higher than the cost of extraction. It was done with small sacks on camel backs or barrels on sleighs, even dogcarts.

The Nobel brothers were innovators in oil production through the transformation of a frequently inferior product into a high quality one and delivery of a guaranteed quantity. One customer wrote: “when you buy a hundred pounds, you know you will get 100 from the Nobel’s and not 92 or 85.”

However, the brothers greatest contribution was in logistics and the transformation of a primitive, inefficient and expensive transport into a mass distribution system involving pipelines, oil tankers, railroad tank cars, oil storage facilities and which basically still is used today.

In this way they enabled a superior quality product cheaply and rapidly to reach widely dispersed customers. To do this the brothers constructed the first pipeline in Europe and second in the world.

Ludwig also designed and built the world's first oil tanker in Sweden, the Zoroaster, named after the god of fire. Since it was too long to fit in the locks of Göta Canal it was constructed in parts, transported in pieces and welded together in the Baltic Sea, a radical innovation at that time.

A number of other products were also acquired. Nobel went to Germany to look at a new engine developed by a man called Rudolf Diesel and obtained the license for manufacturing it in Russia. Soon the Nobel diesel engines made at the factory in St Petersburg were installed everywhere in that

country and the world's first diesel engine submarine; the Minoga was built in the Nobel shipyards, with a significant improvement in U-boat performance.

The Nobel company personnel policies were far advanced for its times: they provided housing, medical care, schooling, and pensions to the labourers, in a country that regarded workers as a totally expendable resource. Their workers then saved the Nobel brothers when the revolution came. The Bolsheviks wanted to kill all of the so-called plutocrats but the Nobelites, as the workers were called, formed a protective cordon around the brothers, saying they were far better than the others and should be spared.

The brothers mechanical construction business also expanded rapidly. One of the family factories in St. Petersburg actually covered a whole section of the city and still exist today.

In 1916 under Emanuel Nobel's leadership the company Branobel was the biggest company in Russia, it had 52.000 employees, a huge figure at that time, and producing one fourth of world's crude oil. It had the largest private tanker fleet in the world with 40 tankers and 1.200 tank wagons.

It had 400 oil depots all over Russia. Its revenues far exceeded Sweden's gross national product at that time. Its net worth *at that time* was over 260 million dollars while the shareholders received 40 % dividends.

The year after, in October 1917 the Bolsheviks came to power in Russia. Soon they had destroyed everything the Nobel brothers had built over the last half-century. The wells were filled with water or were set afire, the pipelines blasted to pieces, the offices closed. The tankers and railway cars were confiscated.

Joseph Stalin is said to have worked as a ball bearing cleaner at the Nobel and Rotschild oil companies. It is interesting to speculate how the

world would look if Nobel or Rotschild's had made Stalin a foreman or a director of the company.

Emanuel had to flee, disguised as a peasant. After a dramatic escape through Russia by horse and by foot over lake Ladogas ice he arrived 1918 in Sweden. His brothers were incarcerated a while in Bolshevik prison but also managed to escape to Sweden. The Nobel Empire was irrevocable lost.

In summary, what are the lessons to be drawn from the story of the Nobel brothers in Russia? The most obvious is the importance of choosing your parents carefully for the quality of their genes.

The second is to look at the long-term political stability of your future geographical area of operations.

The third is to treat your employees well because you never know when they get on top of you.

This is a university dedicated to economic science. I heard an interesting definition of the requirements for commercial success of innovations – as you know most of the start-ups fail within a year or two – you need three elements to be successful, first you need a visionary entrepreneur, willing to take risks, going outside the established channels, someone to seize opportunities, in our case it was Robert Nobel.

But then you need to replace him with an able administrator and manager as soon as the business is working, to develop and consolidate it into a solid structure, that was Ludwig and Emmanuel, his son and then you need a business angel, willing and able to provided long term financial support in form of capital in a period of rapid expansion and potential liquidity restrictions and that was Alfred.

Immanuel the father of the four brothers, had moved back to Sweden with the younger brother Emil and started a factory for explosives in Stockholm. Alfred joined a year later.

The Italian chemist Sobrero had invented nitroglycerine, which represented a major advance over black powder but was a very volatile substance, exploding at the slightest provocation.

Safety conditions in explosives manufacturing at that time were of course appalling and Alfred had complained that nitroglycerine on the factory floor created micro explosions when ironclad wheelbarrows passed over it.

In 1864 a detonation occurred killing four persons and destroyed the factory. Among these four was Emil, Alfred's younger brother. The father soon afterwards had a cerebral stroke from which he never recovered.

Irate neighbours and local authorities forced Alfred to move to a barge anchored in a bay outside Stockholm to continue his experiments to render the dangerous blasting oil harmless. In 1864 he managed to combine nitroglycerine with a silicon powder and named it dynamite after the Grecian word "Dynamis" which means power.

Dynamite, being both safe and powerful, rapidly took over world's blasting operations. Among hundreds of other projects it enabled the construction of the Panama Canal and the Simplon tunnel.

As fundamental for the progress of blasting technology as dynamite was his invention of the blasting cap. Without it, there was no safe and efficient method to ignite the dynamite.

Alfred soon had established companies all over the world. He was an astute and indefatigable worker, writing 30 long letters per day on an average.

Alfred was scrupulously honest and trusting, it was therefore a great tragedy for him when he discovered that his closest collaborator, Paul Barbe

had swindled him. Upon Barbe's suicide after a Panama Canal stock fraud, it was found that millions were missing in the Nobel Dynamite companies. Alfred only became more determined to succeed.

Alfred was interested in many other fields such as for example aluminium, which he called the metal of the future. In 1892 he built the world's first aluminium boat called Le Mignon. It was 12 meters long and 1,8 meters broad.

He also had rockets built to replace artillery shells; these experiments were carried out in the middle of Stockholm. It was the second rocket experiment in modern times after the Englishman Congreave. You must be impressed by the recklessness of these men; they were launching these heavy military rockets in the middle of Stockholm.

The world's first photo was taken from a rocket sent up by Alfred to 120 meters of altitude in Karlskoga. He was also interested in synthetic rubber, viscose silk and artificial leather, new oil lamps, signal systems for trains, new steel manufacturing methods, electrochemical processes for industrial use, instruments for anaesthesia, blood transfusions and other medical processes.

More efficient and safer lighting, a revolutionary rotating four-cylinder steam engine, new motion picture methods, the list is almost endless. He received 355 patents altogether, the most in the world after Thomas Alva Edison.

Alfred, called the richest hobo in Europe by Victor Hugo, constantly travelled around to his 18 factories. From a personality point of Alfred was quite a nice man. He had a rare combination of a genius for invention – “I have new 300 ideas per year and if only one of them work I am happy” he claimed - and a good business sense, he was scrupulously honest in his

business dealings and also friendly, generous and a brilliant conversationalist. "I'd rather take care of the stomachs of the living than the glory of the departed in form of monuments" he once said.

But he was also an unhappy man, shy before women, hypochondriac, and a very melancholic personality. Alfred Nobel did not have a very happy life. He was sickly; he suffered from a variety of physical illnesses such as migraine, angina pectoris, chronic bronchitis and was frequently depressed. He had little social life; he could work up to 20 hours per day alone in his laboratory.

Alfred never had a family; throughout his life he had only three relationships with women, all disappointing. The first was with a young girl in Paris, Miss Riviere, who was working in a pharmacy. She died very young in tuberculosis and Alfred was devastated.

The second one was Bertha von Suttner, the famous peace activist, who came as his private secretary to Paris but only stayed for a week before returning to her fiancée. Alfred, who had proposed marriage, was again shattered.

He also had a long and unhappy affair with a young Austrian girl, Sophie Hess who was 23 years younger than he. It was a true Pygmalion scenario in which Alfred tried to educate the girl to take a place at his side. She, however, was only interested in what material satisfactions she could obtain so for 14 years they mostly lived separate lives and communicated through letters, he writing to tell her to improve herself and she telling him to send more money.

He had four homes, in Paris, in Ardeer, Scotland; in San Remo, where he moved after the French accused him of spying for the Italians and in Sweden where he bought Bofors Industries, one of the world's largest armament

factories. Wherever he settled down, he built laboratories. In these he spent most of his working hours, sometimes up to 20 hours per day.

He was deeply interested in literature and wrote both poetry and a play *Nemesis* – actually a pretty lousy play.

He wrote to his brother expressing his dread of dying alone without anybody dear to him attending his deathbed. Still that was what happened, in 1896 he had a stroke and died alone in his villa in San Remo, Italy, only surrounded by his servants.

One year before his death Alfred had signed the famous document, which would realise some of the goals to which he had devoted much of his life. His funeral in Stockholm resembled a state occasion.

Alfred's reasons for creating the Prize were defined by him in the following way:

"To spread enlightenment is to spread prosperity for everyone and with prosperity most of the evil will disappear. The conquests of scientific research... instil in us the hope that the microbes of the body and the soul will gradually be exterminated and that the only war humanity will wage in the future will be the war against those microbes". Nice sentiment I think.

Why did he choose the five subjects he did, chemistry, physics, literature, medicine and peace? Why not, for example, mathematics or astronomy or biology?

The answer is simple.

He chose chemistry and physics because he worked in those fields and saw himself primarily to be a chemist and a physicist.

He chose literature because he was also deeply interested in literature, he read voraciously and had a very large collection of books.

His interest in medicine was reinforced by the fact that he was in poor health, somewhat of a hypochondriac and constantly complaining about various ailments. He found it ironic that the doctors prescribed nitroglycerine for his vaso-constrictory-based headaches since he felt his work with the acids producing the substance, had in fact caused them.

His interest in peace came from several sources, he was influenced by the pacific poetry of the English poet Percy Shelley, by his long standing friendship with Bertha von Sutter, who won the Nobel peace prize in 1905 and a genuine personal desire to promote peace. He had no particular interest in mathematics or astronomy or other subjects.

Why the unique prestige of the Nobel Prize? As you know, there are literally hundreds of awards around the world, Lasker in Medicine, Craford in Astronomy, Goncours in Literature, the Kyoto Prize in technology, science and arts, the Right Livelihood Award and the Feisal Prizes in Saudi Arabia are some of the most prestigious.

Why is it that the Nobel Prize year after year finds itself alone at the top, far above any other? There are several reasons for this:

First, a very long tradition. Each Nobel laureate becomes member of a large group of famous people whose collective accomplishments and reputation is reflected upon him or her and their descendants.

A Japanese representative for one of the other prizes, expressed his surprise, during a visit in Stockholm, over the openness of the Swedish foundation and wondered, according to Stig Ramel, the president of the foundation, if he was not afraid of the competition. Ramel is supposed to have answered: “no risk for that, we have a head start of more than a hundred years over you”.

A second reason is the solemnity of the proceedings, it is a rather splendid ceremony, the Swedish king bestows the prizes, with the royal family attending together with leading politicians, scientists, academicians, the banquet is resplendent with classic music, performance of international artists, beautiful surroundings, the best food and wine that Sweden can offer and so forth.

A third reason is the thoroughness in the selection of the candidates: each procedure involves dozens of external experts, takes the better part of a year to do and costs the equivalent of the prize itself, over a million dollars.

There is also a strict formal separation between my family who gave the money, the foundation who manages it and organizes the ceremonies and the prize committees who select the winners. No undue cross influence is thereby possible, as with some other prizes.

The prizes are furthermore truly international; they are given to anyone regardless of race, nationality, creed and sex. No restrictions that might have lessened the reputation of the award.

The significant prize amount is another reason. Eight million Swedish crowns is a fairly substantial sum, tax-free in all countries except the US.

Before his death in 1896 Alfred and his brothers owned or controlled assets of 83 million crowns, which today would represent about three quarter of a billion dollars. The market value of Nobel Foundation assets today is roughly 3 billion Swedish crowns or 470 million US dollars which represents Alfred's part of the family fortune.

The price sum represents a dramatic increase in the prize amount. It is due to the Foundation acquiring the right to invest on its own and not being forced to invest in government bonds, which the will specified.

United States far dominate the number of prizes given with over 70 % of the total. In the US, Harvard tops the list followed by UCLA, Cal Tech. MIT, Chicago and Stanford. After Harvard, Cambridge University in the United Kingdom comes second in the total number of prizes won.

According to the testament, the income of the capital should be distributed to those who during the preceding year have conferred the greatest *benefit* on mankind. Of course it is difficult to determine the immediate effects of new discoveries, so sometimes the prizes are given to people decades after their original work. I believe that this represents a diversion from Alfred Nobel's wishes to reward ongoing research and younger scientists.

It is clear that for the absolute majority the prizes given have been fully deserved. It is sufficient to recall the names of pioneers in medicine such as Robert Koch, Alexander Fleming, James Watson and Francis Crick and Godfrey Hounsfield & Allan Cormack for the CAT scanner.

In physics William Roentgen, Marie Curie, Guglielmo Marconi, Albert Einstein are all household words. In chemistry Ernest Rutherford, Willard Libby, Linus Pauling and Otto Hahn are equally famous.

Peace prize names are even more recognised and it is sufficient to mention Nelson Mandela, Lech Walesa, Andrei Sakharov, Martin Luther King, Mother Theresa and Albert Schweitzer, to realise what significant contributions to mankind they have made. In literature names such as Samuel Beckett, Rudyard Kipling, William Yeats, Bernard Shaw, Eugene O'Neill, William Faulkner, Winston Churchill and Ernest Hemmingway need no further presentation.

There has been however examples of prizes given to apparently significant discoveries of great benefit to mankind at one time but which proved to be highly detrimental to humans as time passed.

Examples of this is the German Fritz Haber's chemistry prize in 1918 for combining nitrogen and hydrogen into ammonia which was used to produce artificial manure but also during the first world war to produce poison gas that killed hundreds of thousands of allied soldiers.

The Swiss Paul Muller's invention of DDT in the thirties and the Spanish count Antonio Egaz Moniz's Prize in 1949 for what is popularly known as lobotomy of cuckoo nest notoriety; are other examples. Most of the time however the scientist get their just reward within a reasonable timeframe.

There are a number of other prizes in the world, which attempt to link themselves to the Nobel Prize fame calling themselves alternative Nobel Prizes but none has been able to gain any prestige commensurate with the Nobel Prize itself. The Nobel Foundation, together with the family who has the right to the name, actively attempts to stop any abusive copying of the name for commercial enterprise and that includes attempts to copy the Prize itself.

Приводятся уникальные исторические материалы, основанные на воспоминаниях членов семьи Альфреда Нобеля, которые освещают его становление, как выдающегося предпринимателя, рассказывают о жизненных интересах и пристрастиях Альфреда Нобеля, которые, в конечном счете, определили выбор номинаций для знаменитой премии. Отмечается примечательный факт, что Сталин был в свое время подсобным рабочим на заводе Нобеля, анализируются причины, которые привели к тому, что Альфред Нобель так и не создал семьи.

Ключевые слова: предпринимательство, партнёрство, Нобелевская премия, номинации.

Наведені унікальні історичні матеріали, засновані на спогадах членів сім'ї Альфреда Нобеля, в яких висвітлюється його становлення в якості видатного підприємця, розповідається про важливі життєві інтереси і пристрасті Альфреда Нобеля, які у кінцевому рахунку визначили вибір номінацій на знаменитій премії.

Відзначено примітний факт, що Сталін був свого часу допоміжним працівником заводу Нобелю, аналізуються причини, які призвели до того, що Альфред Нобель та й не створив сім'ю.

Ключові слова: підприємництво, партнерство, номінації Нобелівської премії.