

AN IMMIGRANT'S GIFT

The Life of Quality Pioneer, Joseph M. Juran

Transcript of Television Program

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INTRODUCTION:

In the latter decades of the 20th Century, there occurred a silent revolution that swept across nations and effected all the peoples of the earth. This quality revolution began in the mind of a humble immigrant to the United States, Joseph M. Juran. His contributions to industry are heralded around the world, and yet his life story has remained unknown until now. An Immigrant's Gift is a compelling and inspirational portrait of a brilliant mind and a great humanist, who, in an unassuming way, had a profound impact on the international business community and our everyday lives.

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Approximate Total screening time (56:00 minutes)

I. Prologue

STEVE JOBS: Joe Juran found his great subject early in life, and he pursued it over decades. And he's made a deep, deep, deep contribution that will last well beyond his physical years.

BLANTON GODFREY: He was the true pioneer of quality improvement...and has had more impact on the things that we all buy and use everyday services and products than probably any other living human being.

YOSHINAO NAKADA: Dr. Juran came to Japan and really helped a nation which was devastated by war to become a world power.

SYLVIA JURAN: It's a kind of idealism. That's really what it is. It's a determination to work to your utmost capacity. To give the absolute last ounce of what you're capable of. It's a kind of craziness -- it's kind of a wonderful craziness.

STEVE JOBS: There is clearly something in his heart that's propelling him. His pocketbook's not what's propelling him. His heart is propelling him.

JURAN: I've got to repay a debt. And not just to America where, of course, there's a big debt there but also to society generally. I'm a member of the human race, and the human race needs a lot of improvement, and I'd like to help.

II. The Sun Rises Again

NARRATOR: In 1987, Emperor Hirohito conferred on Dr. J.M. Juran the highest award that can be given to a non-Japanese: the Order of the Sacred Treasure... ..in recognition of Juran's contribution to the "Japanese miracle"... It was a miracle of post-war industrial rebirth, economic recovery and eventual domination of many industries in the United States and around the world. How did the Japanese achieve their miracle? Quality. Quality rescued the nation from ruin and from a reputation as the world's manufacturer of junk. The irony was that Japan learned the lessons of quality from American business consultants. Notably W. Edwards Deming...and Joseph Juran.

JURAN: The whole direction of the country was suddenly smashed up, complete discontinuity trying to achieve their place in the sun by military means, and now that was gone. They had to turn around and do it by trade, if they were going to do it.

PETER DRUCKER: It's almost impossible to realize how fragile that society was, how close to the abyss of social disintegration it was. The old leadership was totally discredited, not just purged. The new people only knew that the things they had grown up in no longer worked.

HITOSHI KUME: The fact is that Japan is a resource-poor nation. To survive, we've always needed to manufacture and export industrial products so that we could import food.

TAKESHI KEN KAYANO: If products are not good quality, they won't sell. So, even if people work hard, if they make poor quality products they won't sell, and they can not survive.

NARRATOR: Japan looked for help to the leading industrial nation on earth. Dr. Deming, the first American quality consultant to arrive in Japan, preached statistical quality control -- a method used by engineers and technicians to determine whether or not a product has been manufactured to the intended specifications. Juran, by contrast, taught Japanese companies that statistical methods were not enough. Quality was the responsibility of management. Senior management must take personal responsibility for making quality happen. And ultimately, everyone in the organization, Juran argued, must become involved in making many, many improvements . . . year after year.

JUNJI NOGUCHI: Of course, Dr. Deming taught us statistical quality control. But today, Total Quality Control as participated by all employees is based on Dr. Juran's teachings.

NARRATOR: Juran found himself lecturing to the top executives of the leading Japanese companies.

JUNJI NOGUCHI: Dr. Juran's philosophy and his lectures taught those specific things that top management must do to achieve quality.

GENICHI TAGUCHI: Dr. Juran was able to motivate Japanese top management to improve quality. He proved to be a driving force for these people.

NARRATOR: Japan's senior executives took Juran's lessons to heart.

JURAN: Top people took charge of quality. They trained the entire hierarchy of all functions, all levels, in how to manage for quality. They went into quality improvement on a revolutionary pace. And they found ways to bring the work force into participation in that revolution.

JUNJI NOGUCHI: In Japanese industry, all of the managers who participated in Dr. Juran's lectures were deeply impressed by his philosophy.

HAJIME KARATSU: Dr. Juran was like a wizard to us. We collect a lot of data from the shop floor. We hand the data to Dr. Juran. He analyzes the data. He produces a chart. And he says: here are your problems. So to us, he looked a lot like a wizard.

NARRATOR: Total Quality Management sparked a flame in Japan that eventually ignited a worldwide quality revolution.

YOSHINAO NAKADA: Dr. Juran really showed Japanese people that, yes, indeed, a small island nation with no resources can compete successfully in the world marketplace by having a product which is high in quality by planning and controlling and improving on it.

EIZO WATANABE: During the war, we were an enemy of the United States. But to this former enemy, he has been so warm hearted. He was willing to teach us. This is something that I appreciated. Something I profoundly appreciated.

III. Passage from Romania

NARRATOR: Joseph Moses Juran understood the desperation and poverty that beset post-war Japan . . . he had endured it himself. He was born in what is now Romania, in 1904. His mother, Gitel, illiterate... his father, Jacob, a struggling shoemaker...into a culture where the line between privilege and poverty seemed absolute. "Nobles will always be noblemen," said his father, "and shoemaker's sons will always be tradesmen." And to be Jewish added the prospect of persecution to the daily wretchedness of dirt and want. Young Joe roamed the Carpathian mountains...fished for minnows. And in 1909, when Joe was five, his father left for the new world...promising to send for the family...someday. Joseph proved an adroit student with an analytical mind, drawn to linguistic and mathematical puzzles. By the age of seven, he had deciphered the vowel-less Hebrew text known as rashe.

JURAN: I got interested in those not because of their content, but because of the strange form. And to me that was a challenge to read something that didn't have vowels. It didn't take me long to figure out how to do that. That word went around the neighborhood promptly: "Gitel's yosel reads rashe!"

NARRATOR: Three years after Jakob's departure -- years he mostly wasted gambling and freeloading -- Gitel finally received the long-awaited tickets to America. Unable to read or write in any language and speaking no English, Gitel shepherded her children by train across Europe and then by boat to Canada.

JURAN: The ship, that was a big adventure. Of course, we were in steerage, where the ship is divided down the middle. The women and children are on one side; the men on the other side. You have bunks. And you're slotted in as

though you were in an open chest of drawers. The top bunk, you had to be awfully careful, because some steam pipes that were viciously hot were threaded through there, and you had to be very careful not to burn yourself. We were a day or two in some hotel room, before the connection was finally made for us to get on the train and go to Minneapolis. First time in our lives we ever encountered a flush toilet. And we had a merry time experimenting with that thing. A couple of the meals we had in that hotel, we had things we'd never seen before. Ice cream that was wonderful stuff.

NARRATOR: In Minneapolis, the family found that ice cream and flush toilets would not become a way of life. Jacob learned early on that, in America, shoes were mass-produced in factories. And so, he worked, when he worked, as a cobbler. Home was a tar-paper shack at the last stop on the streetcar line. No gas, phone, electricity, or running water.

NATHAN JURAN: Twelve by thirty is about the size of the house we lived in. And there were eight of us living in the house. Mother and father and six children. And a ninth one, Nikolai who was my father's friend had to go up a ladder into the gable end of the house. And he slept in the attic.

JURAN: We ate a lot of vegetables. And the case of things like cabbage, that was converted into sauerkraut and there were kegs of that, which froze. You had to hack it out with a hatchet in order to consume it in the winter.

NARRATOR: America was at war with Germany, and the German-speaking Juran boys became the bullies' favorite target.

NATHAN JURAN: As far as other kids in school were concerned, we were the enemy. And when school let out for recess and we stepped out of the door, here were all these other kids saying, "Charge on the enemy!" And they pursued us. If we could outrun them, we were safe. If not, we got a beating

NARRATOR: But the Juran children persevered. Within months, they had mastered English. Joe excelled at math and science, and skipped several grades ahead.

JURAN: I was smaller than the rest of the guys. I was beaten up pretty regularly. But I found that mentally I could outdo them. I could beat them playing little games -- checkers or whatever.

MINERVA JURAN GOLDBERG: He's just fantastically equipped mentally. And, in fact, I used to feel sort of in awe. I was afraid I'd say something stupid, you know, because I knew how intelligent he was and I didn't want to say anything to make me look stupid. So I'd try to be quiet around him.

NARRATOR: To defend himself against all foes, real or imagined, Joe began to develop a cocky attitude and a sardonic wit.

NATHAN JURAN: He wrote a little poem, I still remember. At lunch time they used to ring two bells. One was a kind of preparatory bell. Be ready, 'cause in three minutes we're going to go to lunch. And the second bell was the one where everybody left and went to the cafeteria. So Joe wrote a little poem that says: The first bell rings...

JURAN:... and everyone springs to their feet and prepares for the dash To get there first for the weinerwurst. Or to grab a big plate of hash...

NATHAN JURAN: ..But who is so lucky, and who is so plucky As to be there ahead of them all? Why those gracious teachers with smiling features Who leave at the very first call. I think that was cute.

NARRATOR: Joe's bravado disguised a mean streak that only grew deeper as he toiled -- afternoons, nights, weekends -- to help the family survive.

JURAN: In those days, if you were an employee, you were everlastingly held down by employers. Exploited. And I was exploited. Montage of archive film: grocery shop, the ice house, factory, etc. I did everything imaginable. The corner grocery store needed somebody to help out. I had a flypaper memory in those days. I could remember the prices of everything, and I was very precise about things, so he took me on. I became the bookkeeper for the iceman, the ice house, in spite of the fact I didn't know anything about that. What saved that situation was that the owner was worse than I was. I took on laboring jobs everything imaginable, so long as it provided some degree of income. There was a situation where I felt that the world was against me. And I was on the prowl for revenge.

NARRATOR: Despite his disagreement with the world, Joe learned from his labors.

NATHAN JURAN: Joe was fascinated by time-work studies in his early years. Whether it was more efficient for a fellow to use a great big shovel which got you tired quicker or whether you'd be better off with a small shovel and you didn't get tired and you could work longer. That kind of thing absolutely fascinated Joe, and I think it has some bearing on his work.

NARRATOR: In those difficult early years, Joe could rely on one person to steady his life.

JURAN: I think the closest to a role model has been my mother. And that's a strange thing in some ways. Here you've got somebody, an illiterate woman, superstitious, I mean deeply religious, but with plenty of superstitions. But in

terms of humanity, in terms of integrity, unselfishness, there's nobody that's ever gone beyond that.

NATHAN JURAN: When we first came to this country, in Minneapolis, we all went to the Thomas Lowery School there. And one time I remember a big blizzard while we were in school. And when school finished, there was mother who had trudged through the snow.

JURAN: She showed up at school. That was about a mile from our house. She presented me with five cents to take the streetcar home... and she walked. Her enormous strength was -- here she had a terrible life. And I think the only thing that she got out of life was her children. And was unbelievably dedicated to those children. Didn't matter what hardships she endured

NARRATOR: At thirty-nine, Gitel Juran fell ill. In those days, even hospital care could not save a patient with tuberculosis.

JURAN: I remember one of my visits there, neither of us said a word. And there She was dying. I knew She was dying. Of course, She knew She was dying but I doubt commiserating with herself about what a horrible life she'd led. I suspect just feeling the warmth, the love, She had for her children was enough.

NARRATOR: When Gitel died, the family scattered - the girls to an orphanage...and to an apartment above a barber and his prostitute wife moved Joe, brother Nat, and the stern and luckless Jakob.

NATHAN JURAN: Father was a great disciplinarian. We were frightened to death of him. And I don't think any of us really liked him too well.

JURAN: He was a pretty intolerant individual. I suspect, really, shouldn't have had a family.

MINERVA: I remember my little sister didn't want to go to bed. And I remember his beating her. My father beat her. I remember her screaming and crying. Because She refused to go to bed. We weren't allowed to, you know, go against his wishes.

NATHAN JURAN: I went to a party, and I asked my father if I could go and he said, "If you're home by ten o'clock." Well, the first thing I noticed it was eleven o'clock. And I called up frantically to the shop and I got Joe on the phone. And I said, "Joe, tell Pa I'm coming right home. I didn't realize how late it was." And Joe said, "Wait a minute," and he talked to my father, apparently. And he came on the phone and he says, "Pa says don't bother. Come tomorrow and get your stuff. And that was it. I never saw him again. When I said he was a disciplinarian, he really was. He was a hard man. Yeah. But he did two great things for us. He brought us to this country and he made us get an education --

although I don't think he paid for it -- but he made us get it, all the same. He always used to say, I don't want you boys to end up as I ended up," which was a shoemaker, "I want you to get a good education." So, he offered a dollar to anyone who could come home with all A's. And no one ever won it except Joe.

NARRATOR: In 1920, Juran was accepted at the University of Minnesota, the first in his family to finish high school. But there, the world seemed as cold and brutal as ever.

JURAN: And along came something that made a major change. A neighbor taught me to play chess. Within a matter of weeks he couldn't touch me.

NATHAN JURAN: We used to play chess when we slept in the same bed, Joe and I after the lights were out. We didn't have many lights in those days. But when the lights were out, and everything was dark, we'd play chess just by visualizing the board and call out the moves, see? But after maybe, six or eight moves, I'd be lost, but Joe knew exactly where every piece was. So he always won.

JURAN: In chess, there are a number of different modes. One is, you just play safe. Tighten up all the chinks in the armor and nothing can get through. Wait for the other guy to make a mistake. That's not the way I played. I'd take a gamble. I'd give away this, I'd give away this, because I saw a means of attack and the other guy didn't. So the fact that I won many games by that method which is regarded as pretty brilliant stuff meant that even the guys I'd beat looked up to the fact that it was beautifully done.

NARRATOR: As a sophomore, Juran took the title as University chess champion and held it through his senior year.

JURAN: In world affairs it's not a big deal to be a college chess champion. But to me, it was an enormous thing, because in a place like the University, the chess champion has a high status. They looked up to the fact: this guy's the college chess champion. The faculty looked up to it. And of course I loved to win

IV. Boarding a Big Ship

NARRATOR: In the early 1920s, the first technology industries were emerging. In particular, Americans had developed a seemingly insatiable appetite for telephone service. And Western Electric, the research, installation and manufacturing arm of AT&T, scrambled to satisfy the demand for cable...for poles...the growing need for switches ...and America's surging passion for those stylish handsets. Western Electric's major plant, The Hawthorne Works in Chicago, was hiring three hundred new people every month

JURAN: Here I was a youngster just out of engineering school in 1924 and there had come to the school several recruiters from the big companies. They recruited college graduates and that was the basis of my joining Western Electric. I was dealt out to a department which they called the Inspection Branch. Today, it's called Quality Management. I wasn't very clear on what they did. I didn't care. Because this was that major goal of a steady job and steady pay. Just the simple rudimentary of survival, through being on a big ship that would handle the ocean waves and not being on a canoe that would be much more susceptible to disaster.

NARRATOR: Now, with a steady job and steady pay ensuring survival, Juran began to pursue a second goal -- marriage and building a family.

MRS. J.M. JURAN: I met him through one of his sisters, who was a good friend of mine. He didn't have much money then to buy proper clothes, Or was even interested in proper clothes. And so, you know, we saw somebody who was dressed rather shabbily and didn't behave like most of the other young men that we saw. He wanted me to go on a date with him every Saturday. And then, before long, he told me that he would like me not to make dates with anybody else. The wedding was a very simple situation. It wasn't really a wedding; it was just a marriage ceremony. It was so different in those days with young people. The most important thing was to have a family. And you didn't worry about whether the income was going to be enough to do all the things you wanted to do. You just would manage on whatever you had.

NARRATOR: But Juran had no intention of managing on so little for very long. At the Hawthorne Works, he started out as one of five thousand inspectors -- practicing a primitive form of quality control. Applying the skills he honed as a chess champion, Juran could analyze a problem more keenly and develop solutions more swiftly than any of his colleagues.

JURAN: The people conferred with each other: What should we do in this situation? There were some options here. If you could come up with an option that hadn't been thought of or that is going to be agreed to by the powers that be you've scored kind of a victory.

NARRATOR: Juran's first promotion came quickly. He was chosen to help form a new department for quality control. Here he began to make his mark.

JURAN: I was on a very fast track at the outset, much faster than the great majority of people, and I extrapolated that curve way beyond what I had any business extrapolating. I was pretty naive about some of these things. But there was a goal there, a specific goal: I want to climb up into the stratosphere.

NARRATOR: Then, the sky fell.

JURAN: And all of a sudden, the world started to collapse around me. People that had been there twenty, twenty-five years found themselves suddenly laid off. I mean here's a factory, employing over 40,000 people and being shrunk down to about 7,000. What a devastating thing that is. People had thought themselves absolutely secure. They were raising their families, they had mortgages they were paying off comfortably and all the rest, and suddenly had no income. Terrible. And I saw that as a very real threat to myself. By that time I had three little kiddies and my biggest concern was, are they going to have to endure the poverty that I went through?

NARRATOR: For Western Electric, business gradually improved. But for Juran, things grew worse after the Depression.

JURAN: When I got into this company and began to develop some capabilities got to be a manager you're starting to have power. I began to get my vengeance. I started getting even with the world. I had a very sharp tongue. Of course, I could outdo them individually, just about all of them. No one of them was a match for me. It had no place in a setup like that where you have to have teamwork and where you have to have respect for the views of others and so on. When you look back at it, it's stupid. The people I was getting revenge on had nothing to do with what happened when I was a youngster. So it was completely irrational, but I did it anyway. Because of what goes on...you know, the human brain is wired in mysterious ways

NARRATOR: Although Juran became a department head at Western Electric's headquarters in New York, that was as high into the stratosphere as he would soar.

JURAN: It became pretty clear to the people at the very top that this guy shouldn't be a manager involving a lot of people. He's good at analysis, keep him at that. So I saw things closing in on me. But about that time, along came World War II

JURAN: Somebody had given my name to Stettinius, the Lend Lease Administrator. He got hold of me. He had a problem that he thought I could help him on. Could I come down for six weeks and help him out? Well, I had quite an interest in that war. I had just a seething hatred of the Nazis. They were a threat to me personally, and my family. So I took a leave of absence and went down there for six weeks.

NARRATOR: The Lend-Lease Administration in Washington was established in March of 1941 to provide supplies to Allied nations everything from dried eggs to fighter aircraft. But, within months, it was a multi-billion dollar tangle of red tape, paperwork and government agencies.

JURAN: It soon became clear that while each of these agencies was very knowledgeable about its particular role, none of them had a clear understanding of the overall process of moving something from a factory until it got on a boat and was on its way to its destination. And I could see, until we armed each of these members of that team with that knowledge, we weren't going to be able to solve this problem.

NARRATOR: Juran's six week leave would turn into a four year mission.

SYLVIA JURAN: It was very altruistic since he took a big cut in salary, I guess. It wasn't easy for the family. But he felt that it was something he had to do.

NARRATOR: Juran mapped out the steps in the Lend Lease process like moves in a chess problem.

JURAN: Now they could see, here's the overall process, and they could see what would be the effect. If we changed something here, what's the impact over there? And we had about eighteen or twenty of these principal documents. We found ways to cut that down by about fifty percent.

CHARLES JURAN He almost went broke working for the government. He was working ninety hours a week down there at Lend Lease

NARRATOR: Within six months, goods began to move.

JURAN: I look back on that as a very useful accomplishment and, in a way, I was surprised. I was no expert in government operations but, nevertheless, here was a problem that lent itself to analysis by tools that I was familiar with and which could be applied anywhere. So it stands out as one of the big quality improvement projects of all time.

MRS. J.M. JURAN: I think he's missed a great deal by this uneven giving so much of his time to work, and not enough time to the family. family. And he's gotten what he's wanted.

JURAN: My son Bob had commented on this matter of success that I have achieved. I told him I didn't regard myself as a successful man. Because success deals with a number of different facets of life. And what I think is most important one, which is the family relationship, I was not a success. Pretty well short of a success.

NARRATOR: With World War II ending, Western Electric expected Juran to return.

JURAN: And that's when I made the decision. I don't belong in a big organization. Misfit. They would take me back, and I would have something

that would comfortably take care of my family. But I wouldn't be comfortable, and that would make trouble for my family. What I decided was that here's this field of management which I'd gotten to know a good deal about. I'd had a lot of experience in it, in several different areas of management. And my conclusion was I'm going to spend the rest of my life on that subject, and I'm going to be the complete renaissance man with respect to it. I'm going to philosophize. I'll theorize. I'll lecture. I'll write. I'll consult. I'll do the works. But there was no ready-made job. It didn't exist. I had to piece it together. I launched a canoe.

V. Launching a Canoe

NARRATOR: Juran launched his canoe just as American industry launched into a post-war boom.

PETER DRUCKER: American management had won the war. We didn't win it militarily, because to the very end the Germans were ahead of us militarily. And I was in on this, so I know. No, we won it because of our productive capacity, and our management ability and our ability to get supplies to any part of the world and coordinate them.

BLANTON GODFREY: The United States had this incredible war experience in building up production facilities that nobody else ever had. And was having success that no one else had ever had.

NARRATOR: In this heady climate of growth, Juran methodically assembled the pieces of his new life.

MRS. J.M. JURAN: He was obsessed with work. He was addicted to work like some men are addicted to alcohol.

SYLVIA JURAN: No matter what he did, he always put his best into it. Everything was perfect, it had to be. There was only one way to do things, and that was the right way.

NARRATOR: Juran consulted with major corporate clients. Taught at New York University. Wrote books. Lectured through the American Management Association.

BRIAN HAWTHORNTHWAITTE: He went out and he studied the experiences of companies. The experiences of teams, of individuals, on a functional level, cross-functional level, cross-company level.

JURAN: I could discover things going on in these places that the managers couldn't. I could see the forest. And they were just in the grass blades. Well, they appreciated that. To them, there's wizardry involved here. Bringing that

kind of meaning out of things they had been looking at for years and never had seen.

BRIAN HAWTHORNTHWAITE: He studied the commonalities that existed in all of these various teams and individual activities and then generalized based on what he saw. He has the ability to take something that's very complex, and make it simple -- very easy to understand.

NARRATOR: He saw the same quality problems in company after company -- poorly designed products, cumbersome processes, too much waste -- and the same unwillingness on the part of senior executives to acknowledge the problems.

BALNTON GODFREY: When you're making half of everything in the world, when you're the most productive companies the world has even seen (not just in that point in time, but ever) who can tell you you're doing anything wrong?

NARRATOR: When Juran's Quality Control Handbook was published (although senior executives still failed to heed its message) quality managers embraced all eighteen hundred pages of it.

JURAN: That became the flagship. That opened all kinds of doors. And from then on, it was awfully easy sledding.

NARRATOR: The Handbook made Juran's name, brought financial security and is still considered the foremost work on the subject of quality.

JURAN: It got to a point that in many companies, if they were contemplating making somebody a quality manager, it was prerequisite he attend seminars I held. I mean it had reached that state. So I had a very dedicated audience, and it got to be a loyal audience -- followers, disciples, whatever you want to call them because I'd written the Handbook. They called it the Bible and it got to be the international reference standard.

NARRATOR: It was the Handbook that caught the attention of Japan's industrial leaders in the early fifties. But America's top executives continued to ignore Juran for almost thirty years until they began to get the message from American consumers.

ROBERT GALVIN: We do need a crisis to make -- to see changes of one kind or another. And the Japanese had a crisis of their own. And by becoming better, they created a crisis over here.

JURAN: Take color television. That was one of the early industries that got into a crisis. Took place during the 1960s, when the Japanese began to produce

color television sets that were competitive with respect to the features, but were superior with respect to their life they didn't fail nearly as often as ours.

NARRATOR: One by one, American television manufacturers went out of business. But only when Japanese imports threatened the automobile industry did America's senior managers finally wake up to Quality.

JURAN: American companies flailed away. Some of them, of course, tried to just keep the imports out and get tariffs established, to get quotas established, file law suits against the Japanese, accuse them of dumping and so on. And that had some effect but, of course, it's not a basic solution. The basic solution is to become more competitive.

NARRATOR: But how? Thousands of companies looked to Joe Juran for the answers.

JURAN: As the crisis in quality began to hit this country and got deeper and deeper, then, of course, top managers were drawn in and they became part of the audience. And then I made the discovery that what I'm telling them doesn't fit their needs. I had to redesign I designed something special for these top people

NARRATOR: Juran told top managers, first in Japan then around the world, that quality could help cut costs and improve profits.

FRANK GRZYNA: His message was, we've got to (sic) start to talk in their language...their language is typically the language of money. Presenting the quality problem in terms of the monetary loss that occurs is the way to talk about quality.

NARRATOR: Quality, Juran told the chairman of Rolls-Royce aircraft engines, could drastically cut costs by reducing the amount of rework required.

JURAN: It had never occurred to him that here is an opportunity a return on investment. He's very familiar with a return on investment. But the idea that here is something that could out perform everything that he was doing, had never occurred to him. It was put to him in language he could understand. That was the key to it. That had never happened before.

DAVID LUTHER: The key contribution of Dr. Juran has been in his credibility with senior managers, that says, here's something we ought to be looking at. Here's what you need to move forward. That if you don't follow some form of quality approach, you're going to start moving to the wrong end of the food chain.

BLANTON GODFREY: He was basically the innovator of most of the ideas that people talk about as continuous improvement now. Continuous improvement at a rate beyond anything we've ever dreamed of.

BRIAN TILLEY: We've had statisticians, we've had motivators, we've had all sorts of people who've concentrated on specialist aspects of the subject, but Dr. Juran clearly pointed out that unless we manage the whole business with quality as the prime prerequisite, then all these other things will end up with sparse results, instead of total results.

SCOTT: He has been a world leader who has looked beyond borders and been able to carry know-how to all parts of the world. One has to say that any true listing of great leaders of the 20th Century must include Joe Juran.

PRESIDENTIAL AID: "The National Medal of Technology is awarded to Joseph M. Juran, for his lifetime work of providing the key principles and methods by which enterprises manage the quality of their products and processes, enhancing their ability to compete in the world marketplace."

JURAN: To the extent that I can carry conviction -- because I am a true believer -- get the quality right. Make it the number one priority. Get it into the business plan. Get the improvements going at a revolutionary pace. And stop worrying about anything else.

VI: Living Behind Quality Dikes

NARRATOR: Late in life, the chess champion, industrial problem-solver, reinventor of government and quality pioneer, applied his analytical skills to himself, and a final goal emerged.

JURAN: I came to feel (and this didn't come easy) I've got to stop trying to get revenge on the world. The world has turned around and has become benign. In one sense, the most important event in my life was my Dad coming over here and then bringing us over. Look at what we avoided. We would have been drawn into that Holocaust somehow. And whether we would have survived it is very speculative. I owe a debt to this country for giving me the opportunity -- I've got to pay that debt.

CHARLES JURAN: My father-- he is a sucker for the Star Spangled Banner. I don't know how I could emphasize that enough to give you the idea of how deeply he feels about that. Every fourth of July he reads the Declaration of Independence from beginning to end.

JURAN: I never get over the magnificence of that document. The thought that went into it and the truths that are in it. And they're so inspiring and, of course, especially to an immigrant. I've gotten around to a pretty fair number of countries, by now. Just about all those that are regarded as important, and quite a few that are not. And I don't know any of them in which, in terms of the

practice - adherence to those truths is practiced as it is here. We're in a wonderful country.

NARRATOR: Through an Institute and non-profit Foundation, Joe Juran now applies the lessons of quality to the global challenges of technological development and protecting our environment.

DAVID HUTCHINS: The quality revolution which is now taking place inside industry, is now going out, moving out into the society and the environment. And I think it now impacts every man, woman and child. In the future, this revolution will continue.

JURAN: We've come to realize that we're living behind dikes, we're living behind quality dikes, which are the shield between us and these breaks in the dikes -- some of which are minor, some of which are terrifying. Trainload of chemicals gets derailed and an area becomes uninhabitable. The lakes are being killed. The trees are being killed. And the environment is threatened. Technology has turned around and exhibited a ferocious face, armed with claws and teeth. Who would have thought three decades ago that we could make the planet uninhabitable? Now we know we can. We're doing it. And a couple of decades ago, the public got up on its hind feet and said, we are not going to put up with this. You people that create the technology, create the industrial society, you've got to build good dikes and maintain them forever. To me, it's a more profound fact of life than the Japanese quality revolution. We are in the process of trying to equal the Japanese, and we may well succeed in doing it; we're starting on the way up. But protecting ourselves against the excesses of technology, we're going to be in that from here on...it's going to be never-ending.

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