

QIP Strategic Plan Proposal

c. October, 1986[©]

by

Arthur M. Schneiderman

Presentation date:	Venue:	Notes
10/14/86 rev. c. 10/28/86	Ray Stata (CEO)/Jerry Fishman (COO) Others at ADI	Current

One of my earliest assignments at ADI was to develop a long range QIP implementation plan. I kept delaying this task because I new that I would be met with the usual "that's all well and good but it doesn't apply in our business" response; and this was a response for which I had no convincing answer.

On October 9-10, 1986, I attended Joe Juran's annual IMPRO Conference. One of the presentations was from Texas Instruments' Hiji Plant in Japan, a recent winner of the Deming Prize. They also had a booth where they posted charts describing their improvement effort. This plant made products almost identical to those produced at our largest manufacturing facility. At last I had the irrefutable data needed to prove that "QIP does apply here."

My attempt to take a picture of their charts was greeted with an abrupt: "no cameras!" It took me many trips to the booth to capture all of the data in memory and transfer it to paper. I'm sure that the presenters were curious about my persistent interest in their results.

With the TI data in hand, on October 14, 1986, I met with Ray Stata (Chairman, CEO and President) and Jerry Fishman (Group Vice President, Components) to start the process of developing consensus on the QIP plan. I reviewed with them a set of handwritten slides. Over the next two weeks, I produced this presentation based on those handwritten slides and incorporated their suggestions:

- Acknowledge our last few years QIP efforts and progress.
- Allow for differences between divisions.
- Position it as a proposal.

Over the next several months, I gave the presentation at a number of planning meetings as part of the consensus building process.

NOTES: I've provided brief background notes only on those slides that bear on the subject of ADI's balanced scorecard.

Slide 1

QIP Strategic Plan Proposal c. October, 1986

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Slide 1

Title

Slide 2

ADI QIP LONG RANGE PLAN

OBJECTIVES

- to achieve widespread consensus on, and commitment to a set of QIP goals to be achieved by the end of our next strategic planning cycle (1992)
- to establish an approximate 6 year plan identifying key milestones and activities
- to agree on a detailed 1987 QIP Plan that will:
 - clarify our current QIP status
 - reaffirm to the entire organization the "why and what" of QIP
 - convincingly demonstrate top management's ongoing commitment to QIP
 - build widespread confidence in the effectiveness of a systematic QIP
 - generate the momentum that will be needed if we are to meet our goals

Slide 3

TEXAS INSTRUMENTS, HIJI, JAPAN

FACILITY: 4" wafer fab and assembly of bipolar IC's
built 1974, 1300 employees

**OVERALL GOAL:
(1980)** "...to have our products rated #1 in quality by
more than 50% of our customers by 1985.."

RESULTS: defect levels reduced to 20 PPM (WSJ, 10/3/86)
average unit cost down by factor of 7
% customers rating them #1 in 1985:

linear products	—————→	45%
TTL products	—————→	60%

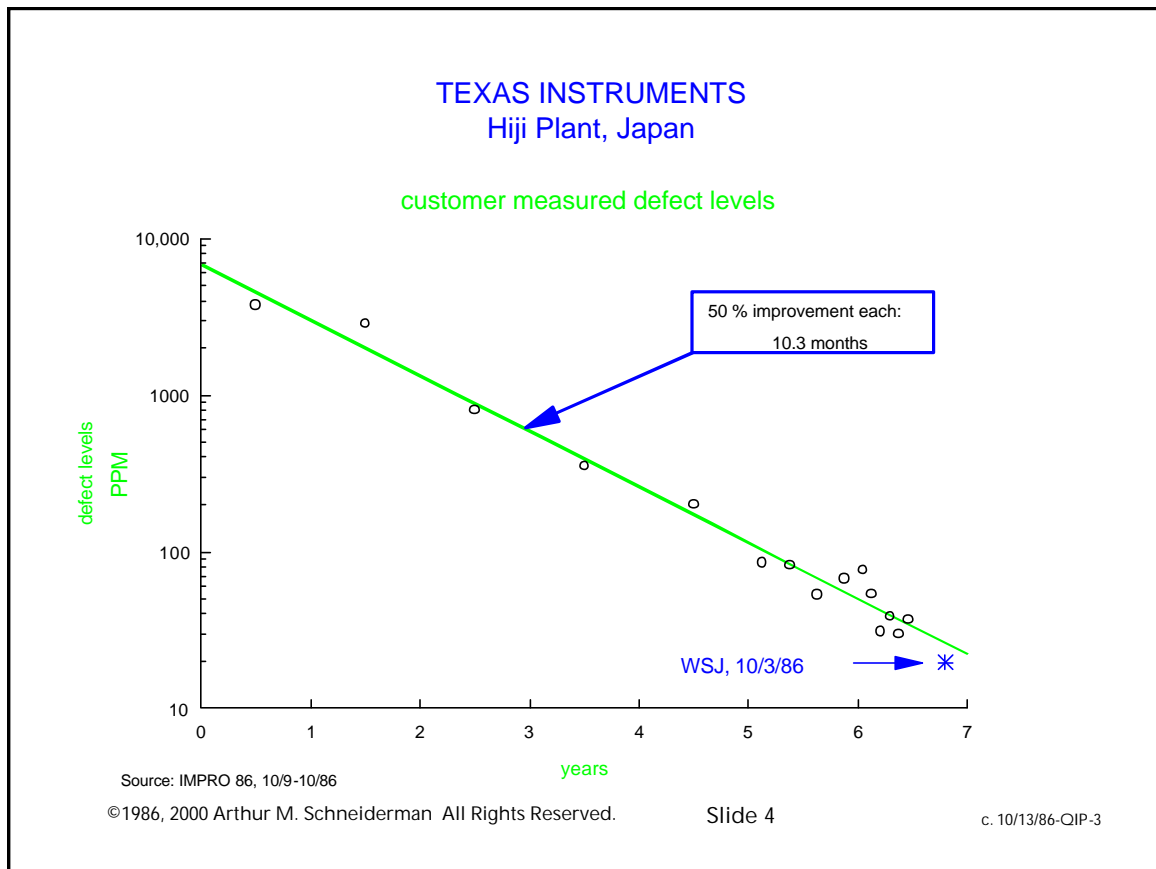
WINNERS OF 1985 DEMING PRIZE

"We've gone as far as we can in manufacturing. We are
focusing on IC design for further defect reduction."
Kimio Nonaka, Manager of TQC

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rev. 10/26/86

Some of the words on this slide were taken from a TI presentation at Juran's IMPRO '86. As you will see, I patterned ADI's overall goal on these words.

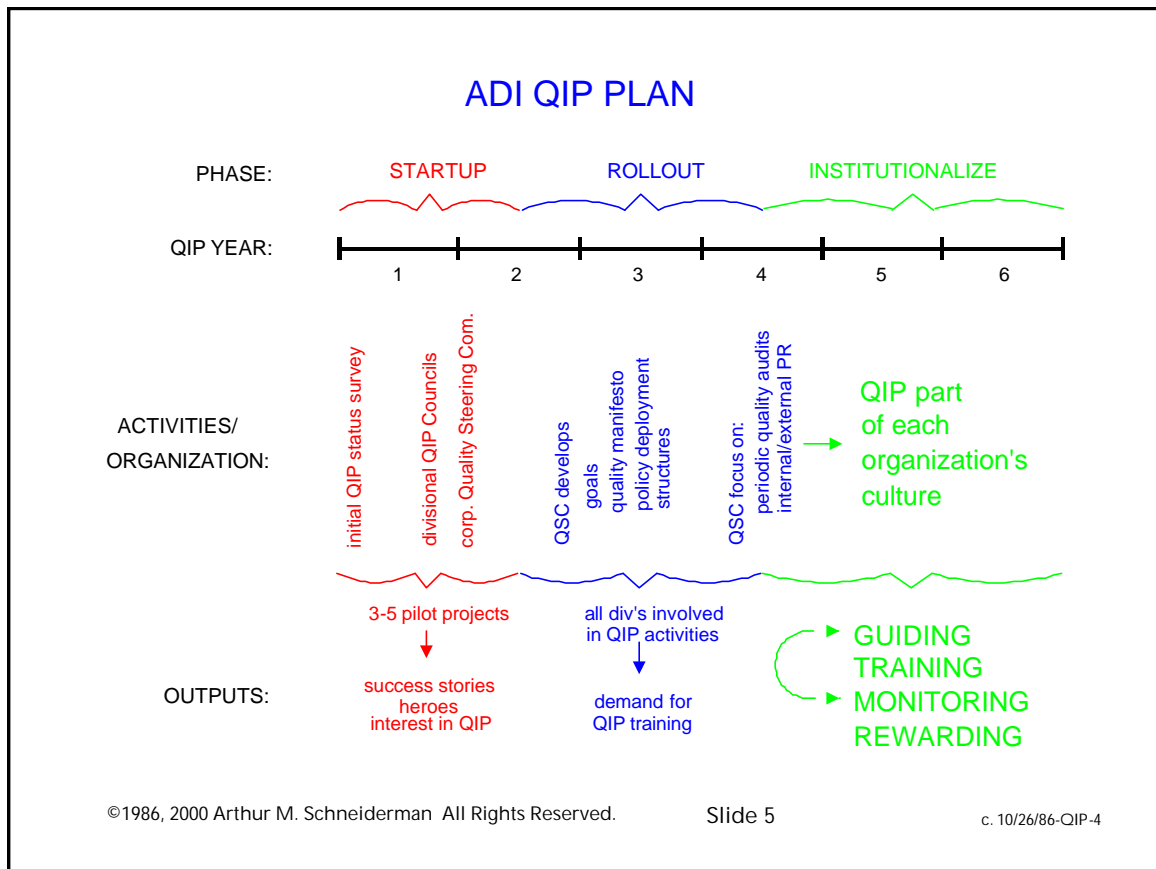
Slide 4



This chart really got people's attention. It showed that TI had succeeded in achieving defect levels that were orders of magnitude lower than ADI's for similar products. It also validated my half-life method and showed improvement rates that were an order of magnitude faster than our engineers were willing to commit to.

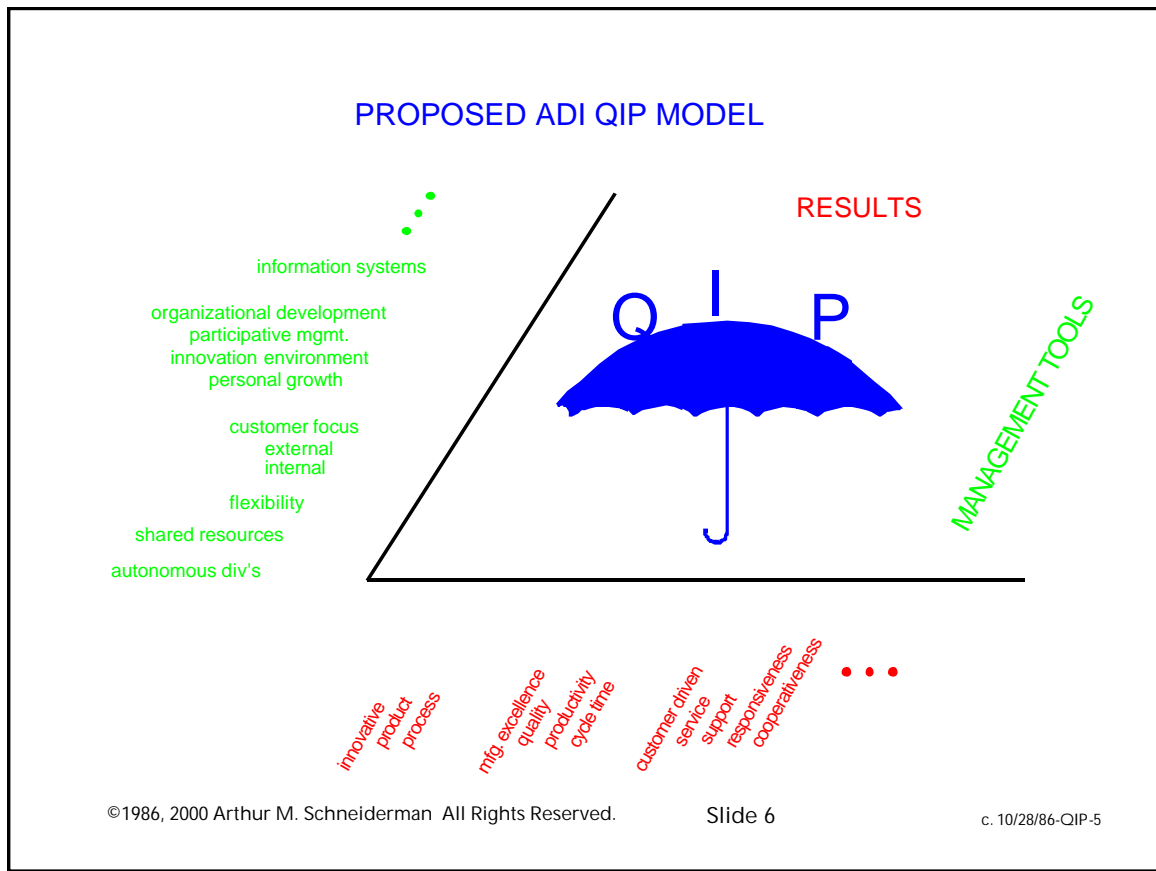
This one slide provided the breakthrough that I needed in order to win the argument over possible future states.

Slide 5



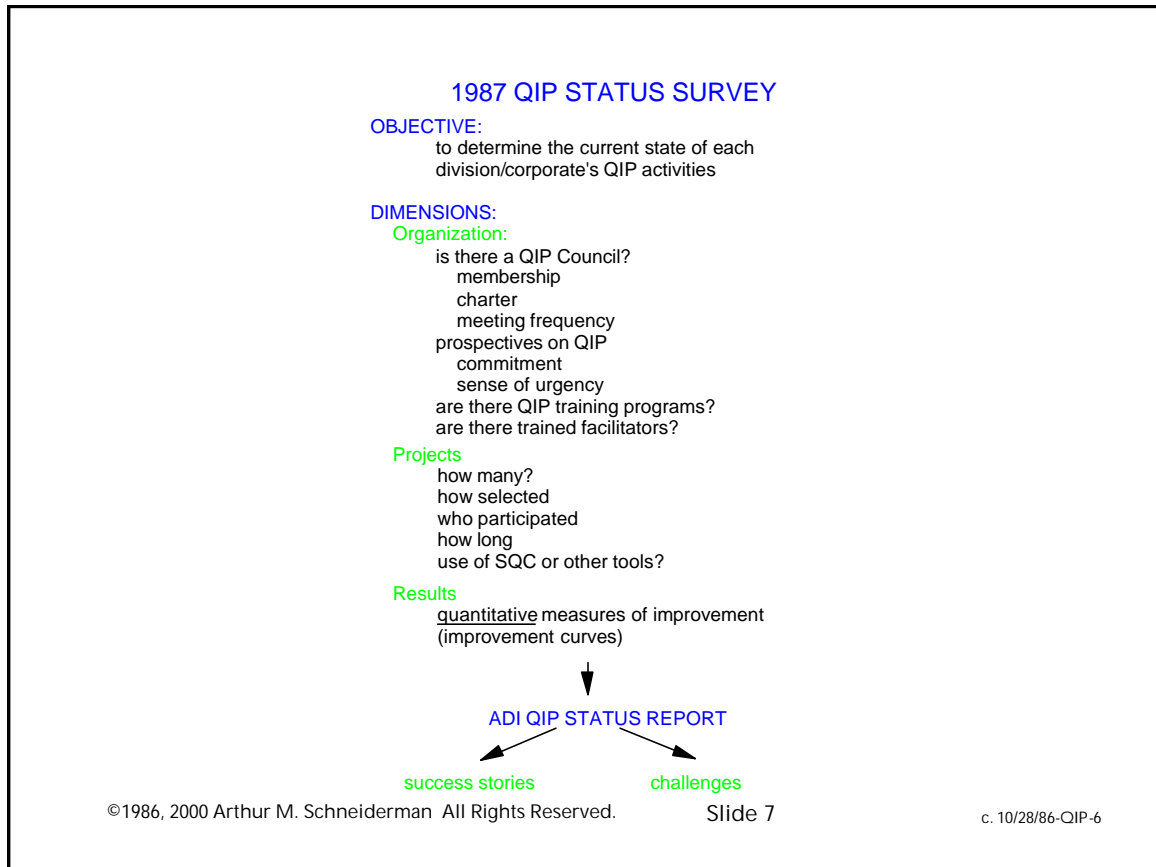
This slide provided a roadmap for QIP implementation. It helped in setting expectations that this would be a multi-year effort.

Slide 6



This was my attempt at integrating QIP into our other initiatives so that it didn't appear as the flavor of the month.

Slide 7



Slide 8

ADI 1992 QIP GOALS
EXTERNAL PERSPECTIVE

To have our products rated #1 in
TOTAL VALUE
by more than 50% of our customers

based on:

- right products
- performance
- price
- quality/reliability
- lead time
- delivery
- support
- responsiveness
- cooperativeness
- willingness to form partnership

⋮

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This slide was based on Slide 3. The first version of this slide applied only to our Wilmington plant, which was similar to the TI Hiji facility. Once people were able to make the connection, it was easy to extend the logic to the entire company.

Slide 9

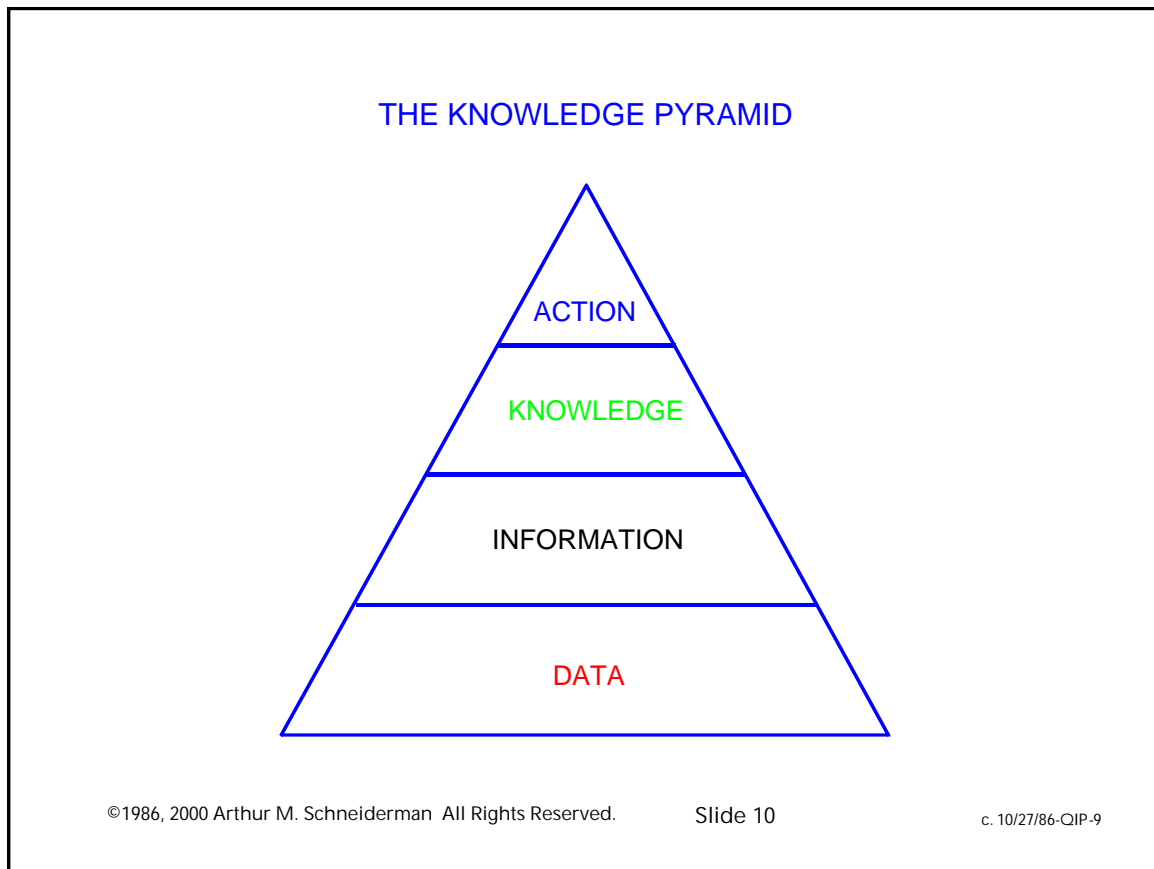
ADI 1992 QIP GOALS
INTERNAL PERSPECTIVE

To constantly strive for the elimination of all
FORMS OF WASTE
at all entities, functions and levels within ADI

<p>Manufacturing and Design</p> <ul style="list-style-type: none">< 10 PPM defect levels>99.8% on time delivery<3 weeks lead time<3 weeks mfg. cycle time<20 weeks design cycle25X reduction in active WIP250X reduction in changeover times	<p>Other Areas</p> <div style="border: 1px dashed red; padding: 5px;"><ul style="list-style-type: none">timely financial reportingreduced turnovereffective meetingsactionable informationperfect safety records<li style="text-align: center;">•<li style="text-align: center;">•<li style="text-align: center;">•</div>
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In contrast to the previous slide, this one identifies the internal drivers for the achievement of external goals.



The purpose of this slide was to highlight an area of significant waste at Analog: Information Systems. We had lots of data and reports, but little useful information.

Also, since one of the basic tenets of TQM is "management by facts," I proposed this as a major area for top management improvement activities.

Slide 11

FORMS OF WASTE
(MUDA)

<p style="color: green;">Ryuzaburo Kaku, Canon</p> <p style="color: blue;">The Nine Wastes</p> <ul style="list-style-type: none">waste in rejectswaste in parts inventorywaste in indirect laborwaste in equipment and facilitieswaste in expenseswaste in designwaste in human resourceswaste in operationswaste in production startup of new products	<p style="color: green;">Taiichi Ohno, Toyota</p> <p style="color: blue;">The Seven Wastes</p> <ul style="list-style-type: none">waste in processing itselfwaste of timewaste of making defective partswaste of motionwaste of overproductionwaste of inventorywaste of transportation
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Since the general theme of the internal perspective was the elimination of waste (“muda” in Japanese), I included these two classifications of waste that I had seen on earlier visits to Japan.

Slide 12

TOP MANAGEMENT'S 1987 GOALS

Guide:	quality manifesto overall goals (quantitative and measurable) steering committee charter incentives implications
Get Trained: (on-going)	Juran on Quality Improvement statistical methods quality literature
Set Example:	QIP projects (1-2 each) e.g.: information systems customer interviews
Be Visible:	regular "air time" to QIP periodic (semi-annual?) QIP Audits reward successes (non-financial) annual QIP award? integrate QIP into other activities strategic planning various Councils various Staffs

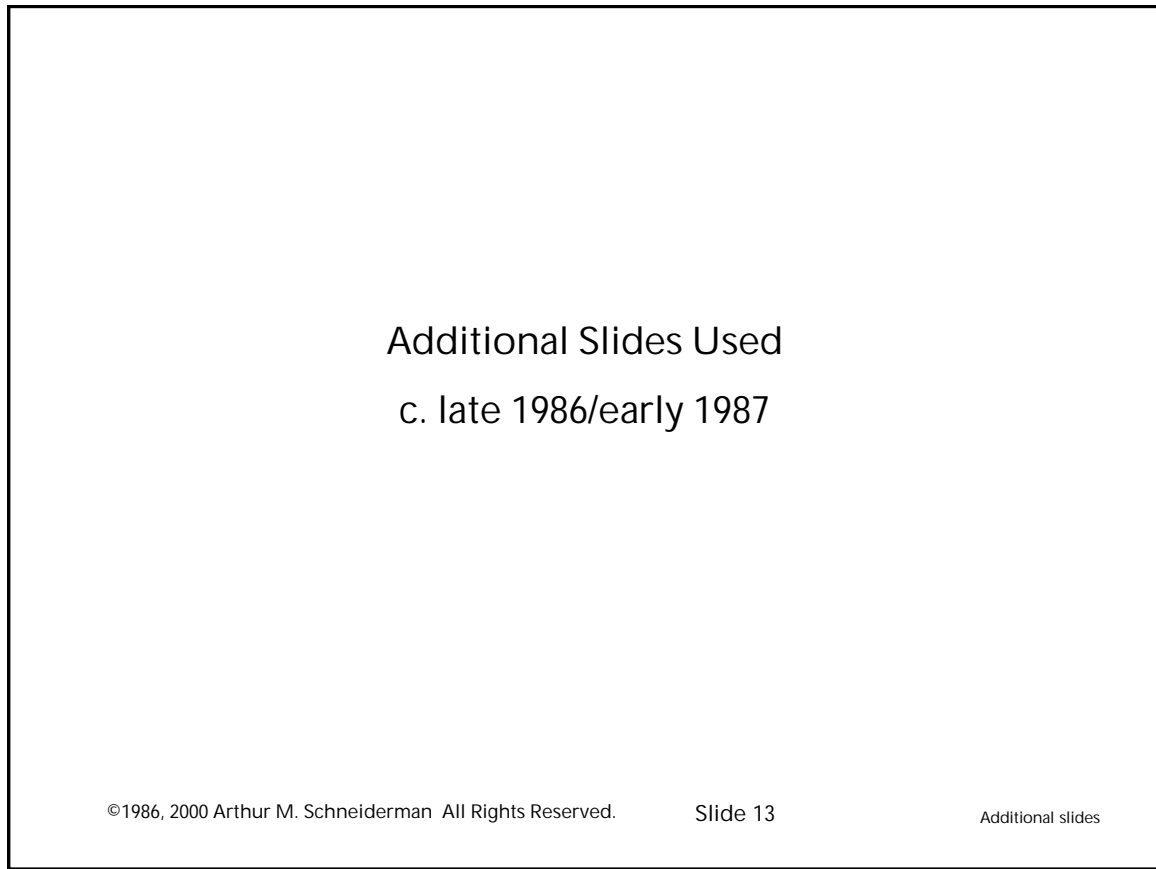
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10-20% of their TIME spent on QIP activities

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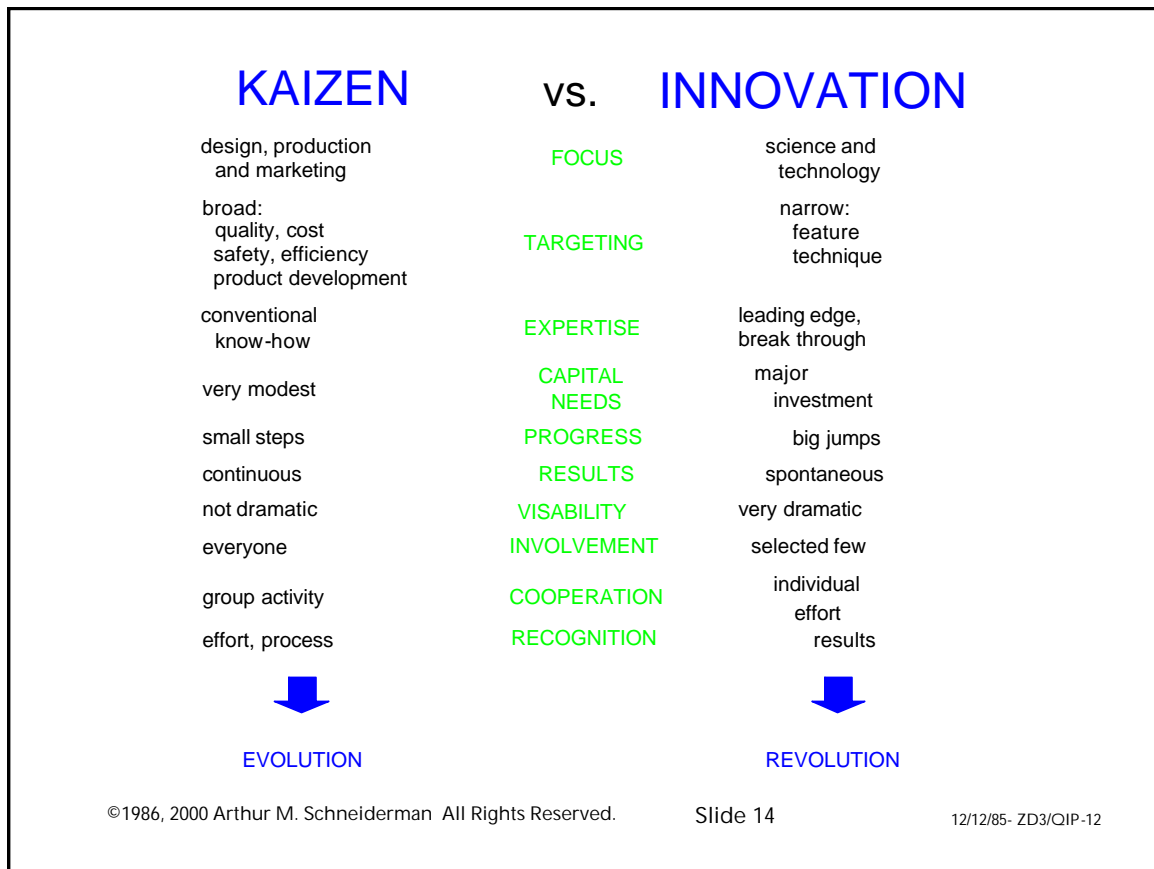
The October 14th version of this slide was directed toward my suggestion for Ray and Jerry's goals for the year. They concluded that these personal goals should be applied to the entire top management team.

Slide 13



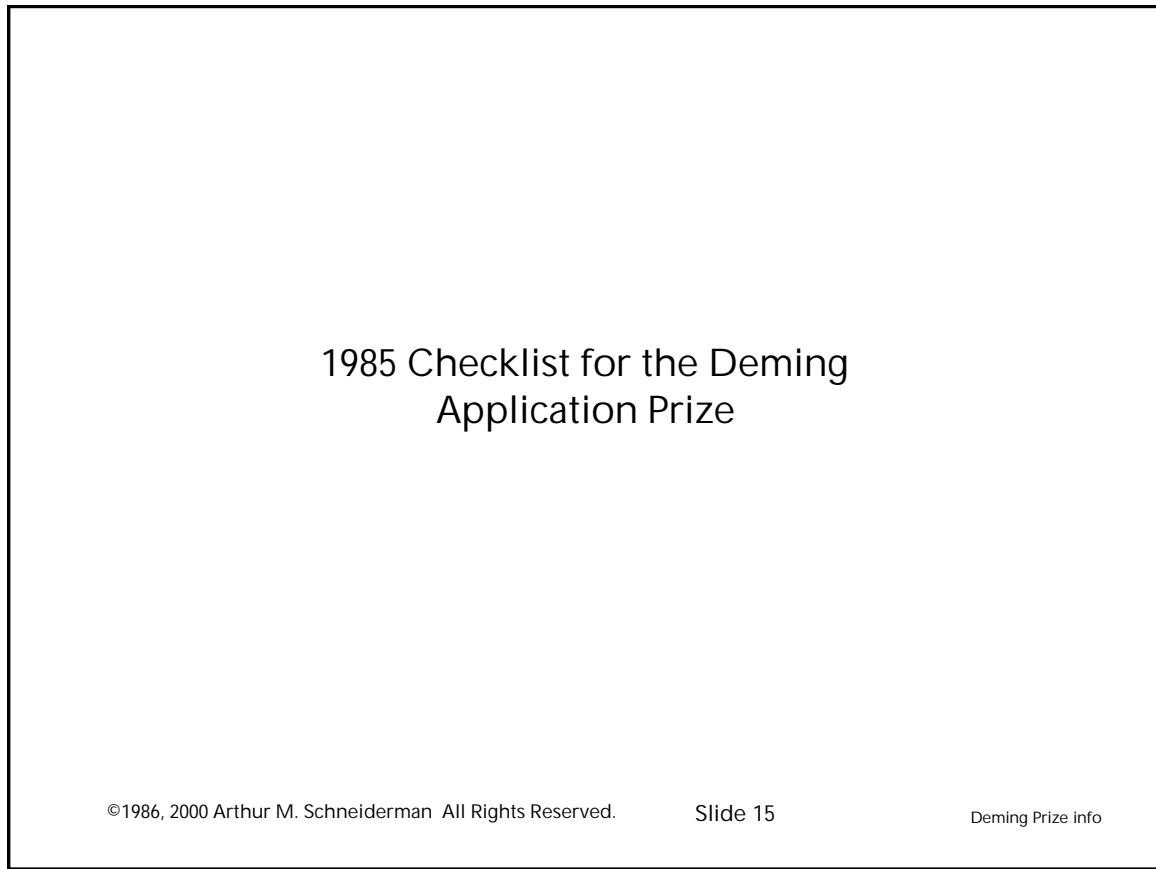
The following slides were taken from earlier materials and were used to expand upon some of the areas covered in the previous slides.

Slide 14

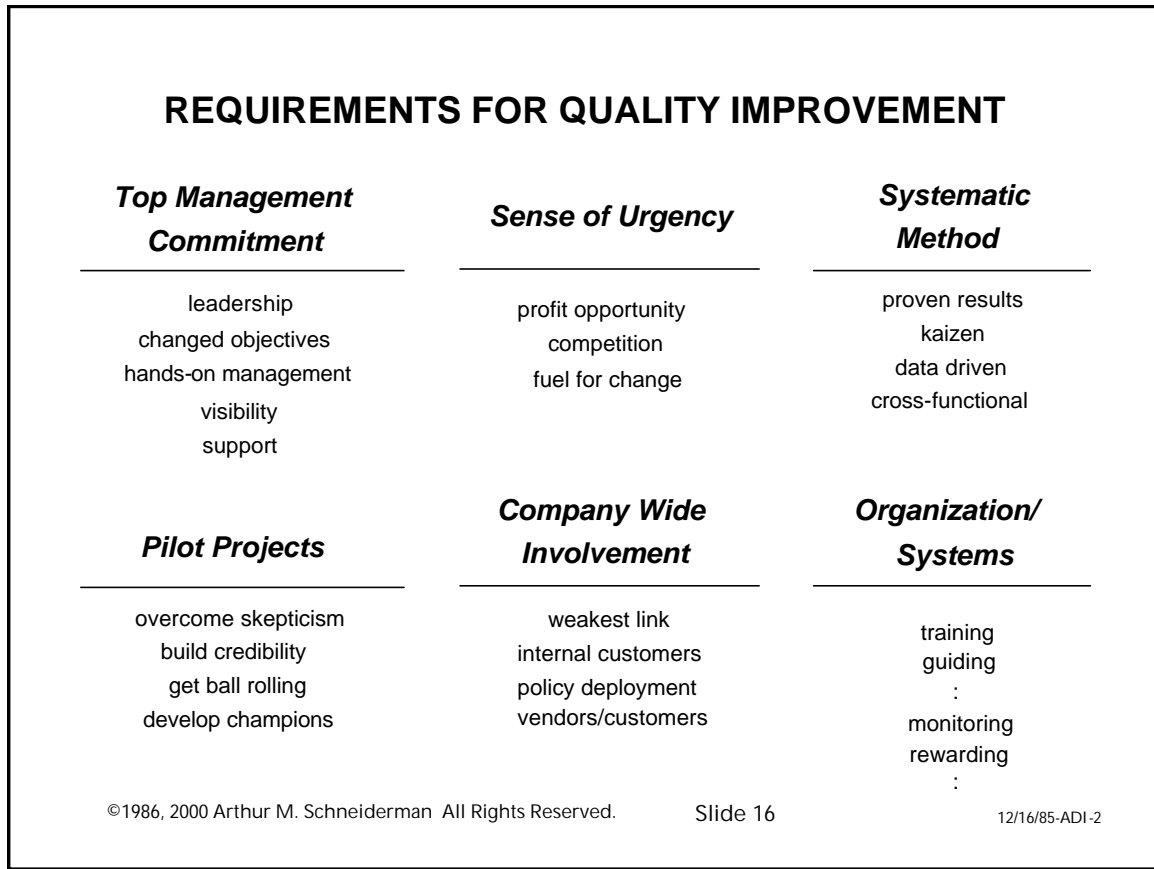


This slide is taken from my first Quality Progress article (see my list of publications) and was used to contrast incremental improvement (Kaizen) to the more common improvement method in use at Analog: innovation.

Slide 15



This slide contained the 1985 checklist for the Deming Application Prize and was used to demonstrate the breadth of coverage of QIP.



This slide represented the elements of a model I had developed for TQM deployment prior to joining Analog.

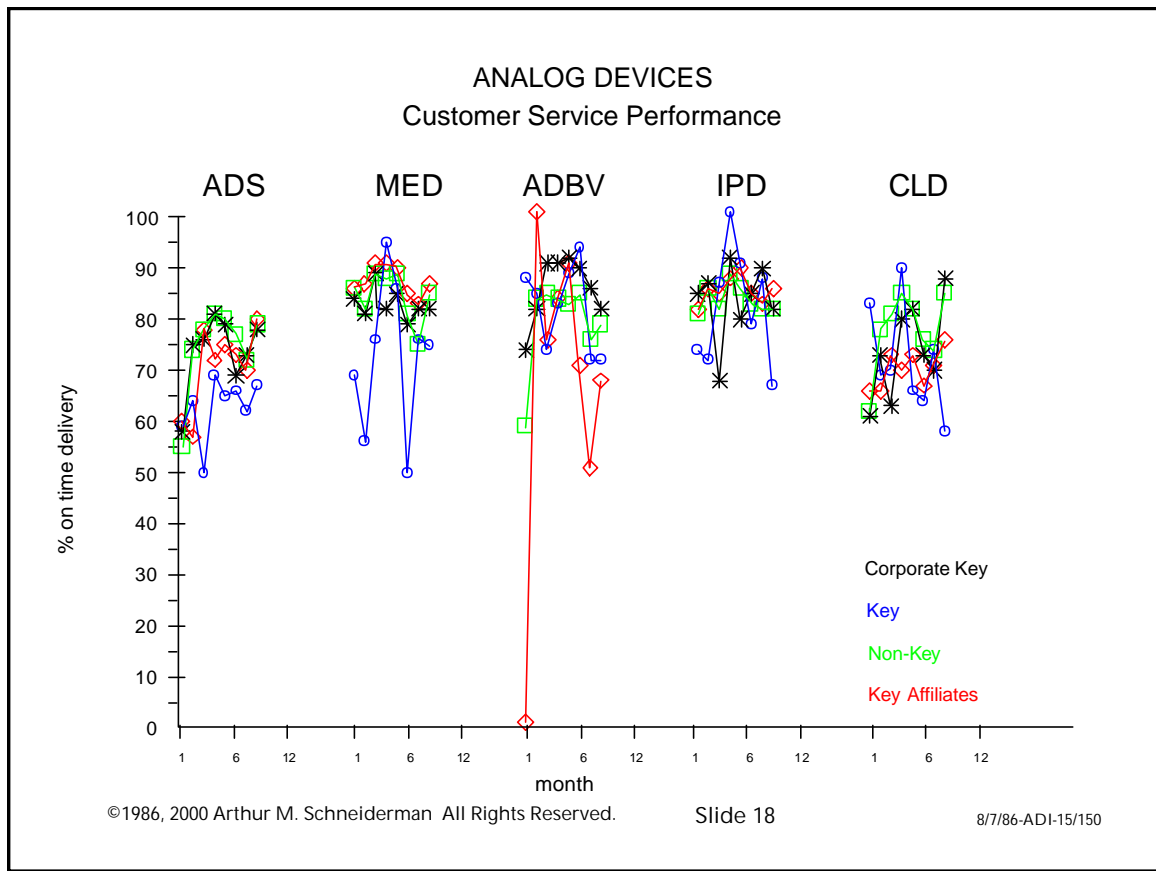
Slide 17

<u>QIP STATUS</u>	
Phase 1: 1985-1986	
<u>Tops-down Priorities</u>	
innovation process	new product cycle time standard cells/sub-cells CAD
customer service	causal/effect metrics
manufacturing process	manufacturing cycle time outgoing PPM
organization development process	TBD
MIS process	TBD
<u>QIP Philosophy</u>	tops-down/bottoms-up
<u>Staffing</u>	AMS
<u>QIP Organization</u>	divisional focus
<u>Training/Awareness</u>	management team JQI (?)
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	c. 1986-QIP Status

Ray wanted to assure that what I was proposing built off of the start he had made in 1985. We called it Phase 1, and my plan for the future was referred to as Phase 2. This slide represents a status report of our QIP upon my arrival at ADI.

There was little consensus, however that the tops-down priorities represented the vital few things that we should be working on.

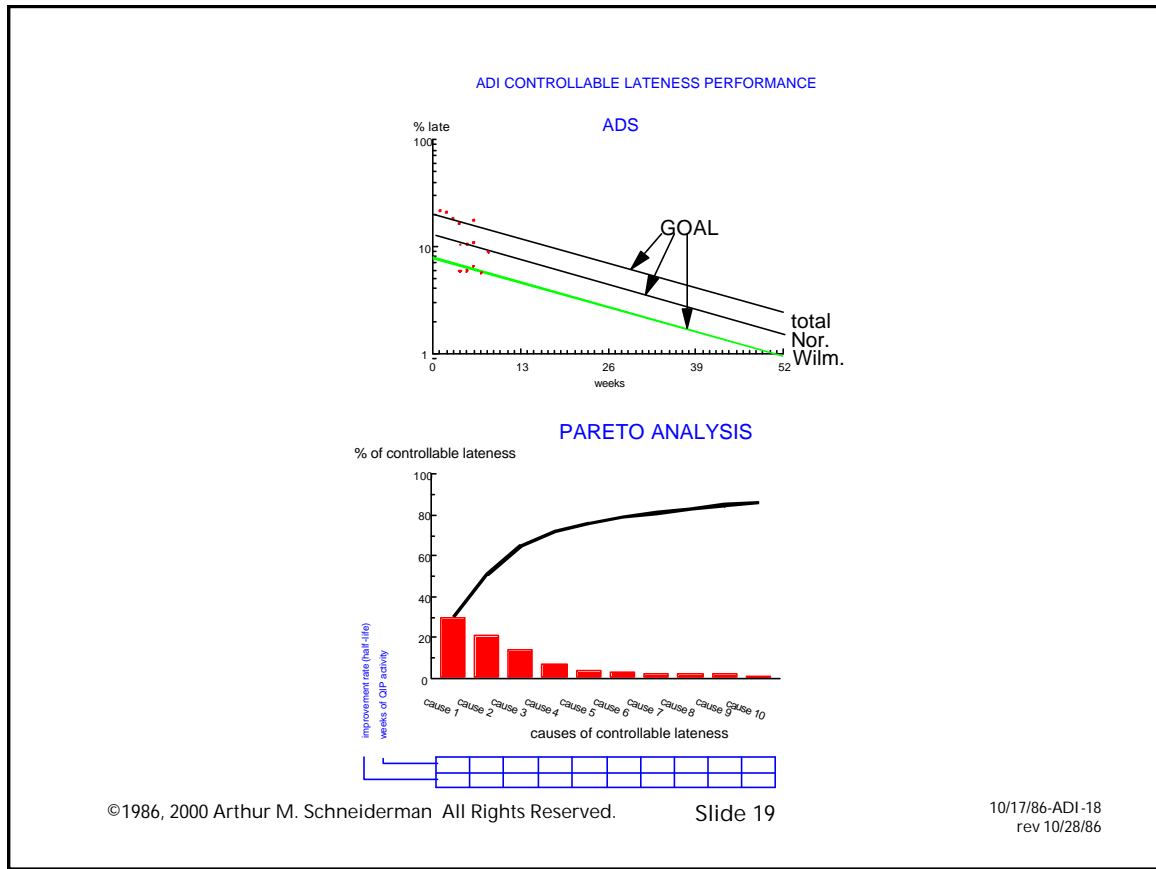
Slide 18



I created this slide to summarize the recent delivery performance of the five divisions that constituted the components group. The four categories represented a customer segmentation based mostly on account size.

This format became our standard way of displaying comparable performance measures.

Slide 19



I created this slide to try to link performance improvement to QIP activity. By constructing similar slides for each of the divisions, I was able to demonstrate to the General Managers that divisions that established QIP teams achieved more rapid improvement (shorter half-lives).

I described the use of this chart in converting one skeptic to a champion in a JSPM article (see #4 on my list of publications).

Slide 20

QIP OBJECTIVES
Phase II
1987

- Deploy goals setting & implementation
- Establish divisional QIP councils
 - quarterly reviews
- Identify divisional QIP priorities
 - metrics
- Train all division staffs (JQI?)
 - other levels
- Full time QIP facilitators
- Maintain visibility of Top Management commitment to QIP
 - integrate into performance evaluation

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This slide was used to establish continuity with our earlier QIP effort.

Slide 21

<u>TITLE</u>	<u>FREQUENCY</u>	<u>SOURCE</u>
Daily Shipments Tracking Report	Daily	P.C.
Daily Delivery Statistics & Detail	Daily	P.C.
CB/Flash	Weekly	A.D.
Weekly Fact. Pert Report	Weekly	P.C.
Eval Update	Weekly	Rel.
Est Net Sales Analysis	Weekly	P.C.
Weekly Sales/Bkg Stat	Weekly	P.C.
Fab info	Weekly	LOG Mktg.
LOG NP Crit Path Stat	Weekly	LOG Mktg.
IQC Weekly Report	Weekly	Q.C.
OQC Weekly Report	Weekly	Q.C.
Due & Overdues Thru wk_____	Weekly	P.C.
NP Status	Weekly	Fab P.C.
Weekly Insp Report, ADKK	Weekly	ADKK/Q.C.
Corp Strategic Summary	Weekly	Corp Sales Admin
Mask Shop	Weekly	Mask Fab
Layout	Weekly	Layout
NP Fab Status	Weekly	Fab P.C.
Weekly Delivery Report	Weekly	P.C.
Wafer Fab Slice Stats	Weekly	Fab P.C.
IBM SQP Summary Report	Monthly	Q.C.
Allocated Products	Monthly	Customer Service
(New Product) Turn Time	Monthly	LOG Mktg.
Monthly Models Report	Monthly	Sales/Data Processing
Quarterly Fin Report	Quarterly	Finance
Rep on Inq. Rec'd or Prospects Produced	Quarterly	Corp Comm (73 pgs!)
Trim/Probe Report	Quarterly	LOG PTDE
Lots on Hold at Coord	?	Q.C. Coord
Jan Qual Update	?	Q.A.

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One of our Product Line Managers kept a log for me of the reports he received on a regular basis. It amounted to about 6" of paper per week. He looked at less than 20 pages from these many reports on a regular basis.

Without my asking, I was quickly added to most of the distribution lists. One thick report had no reference as to its source. None of the other managers who received it knew where it came from either. I remember that one of the measures in the report was "net gross bookings." No one could tell me what it meant and since I couldn't find the source, there was no one to ask.

I never did find the answer. The report kept coming until I left Analog and I wouldn't be surprised if it's still being distributed (and probable still being sent to me).

This slide demonstrated that waste was not limited to manufacturing and that there was a big difference between data and information.

Juran Institute, Inc.
Organization For Annual Improvement:
Responsibilities of Quality Council

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During this period we used Juran's model for Quality Management. This slide contained his breakdown of responsibilities of the Quality Council and was used as a model for the General managers as they created their division QIP Councils.