

Improving Quality in America

America

Make in America Perfectly!

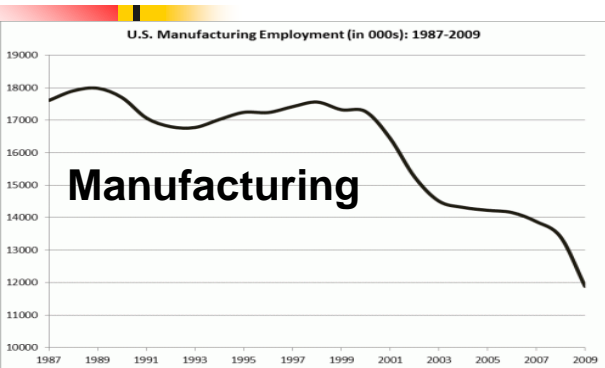
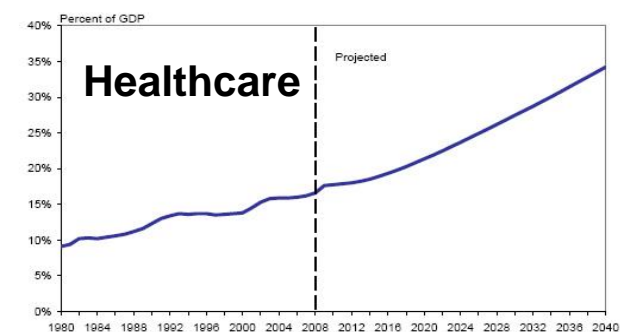


Figure 1: National Health Expenditures as a Share of GDP, 1980-2040



Source: CEA calculations.

www.praveengupta.net
www.iit.edu/cisa

Praveen Gupta
gupta@iit.edu

Praveen Gupta



Praveen Gupta, a management consultant, has authored several books including *Business Innovation in the 21st Century*, *Stat Free Six Sigma*, *Six Sigma Performance Handbook*, and *Service Scorecard*. Praveen is the founding Editor of *International Journal of Innovation Science*. Praveen frequently speaks at conferences and events.

Praveen has developed Six Sigma Business Scorecard, the 4P Business Process Management (BPM) model for excellence, Breakthrough innovation framework, and Six Sigma methods.

Accelper provides training and consulting services in the area of quality management, innovation, Six Sigma and business performance for achieving sustained profitable growth. Praveen can be contacted at praveen@accelper.com.



Disclaimers

1. The primary purpose of this presentation is to raise awareness and generate academic interest to issues of quality in the fields of manufacturing and healthcare.
2. Information in this presentation is gathered from public or web resources without owning any aspect of the information.
3. The information is shared with the audience without creating a perception or presented as a professional counsel or advice.
4. All inferences and conclusions are the presenter's opinion, and do not reflect views of any organization, including ASQ.
5. Readers of the presentation or the audience must make ones own decisions as deemed appropriate.
6. No liability is assumed for any actions taken by readers or the audience solely based on this presentation.



Objectives

1. Highlight quality challenges in manufacturing and healthcare
2. Identify opportunities for improvement
3. Challenge quality professionals to practice quality in personal and professional life to reduce the cost of poor quality



Introduction

We have leaned our factories so well that nobody works there.
We can prove that we have saved a lot of money

Increasing production (revenue) must become a greater
concern now than improving productivity (profit)

We spend time earning money then we spend money to earn
time

Feeling healthy and feeling good is an absolute necessity for
quality at work

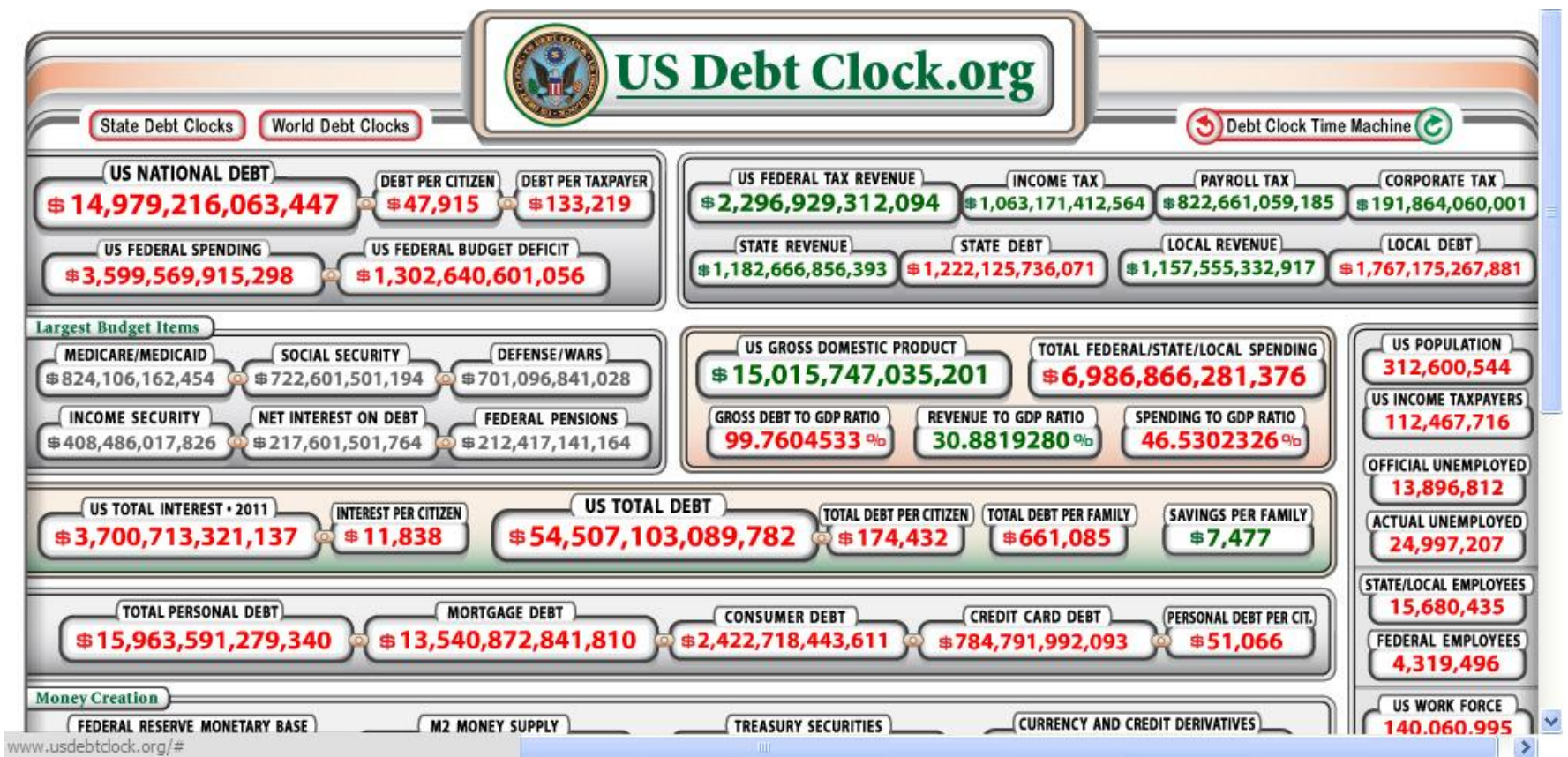


State of American Quality

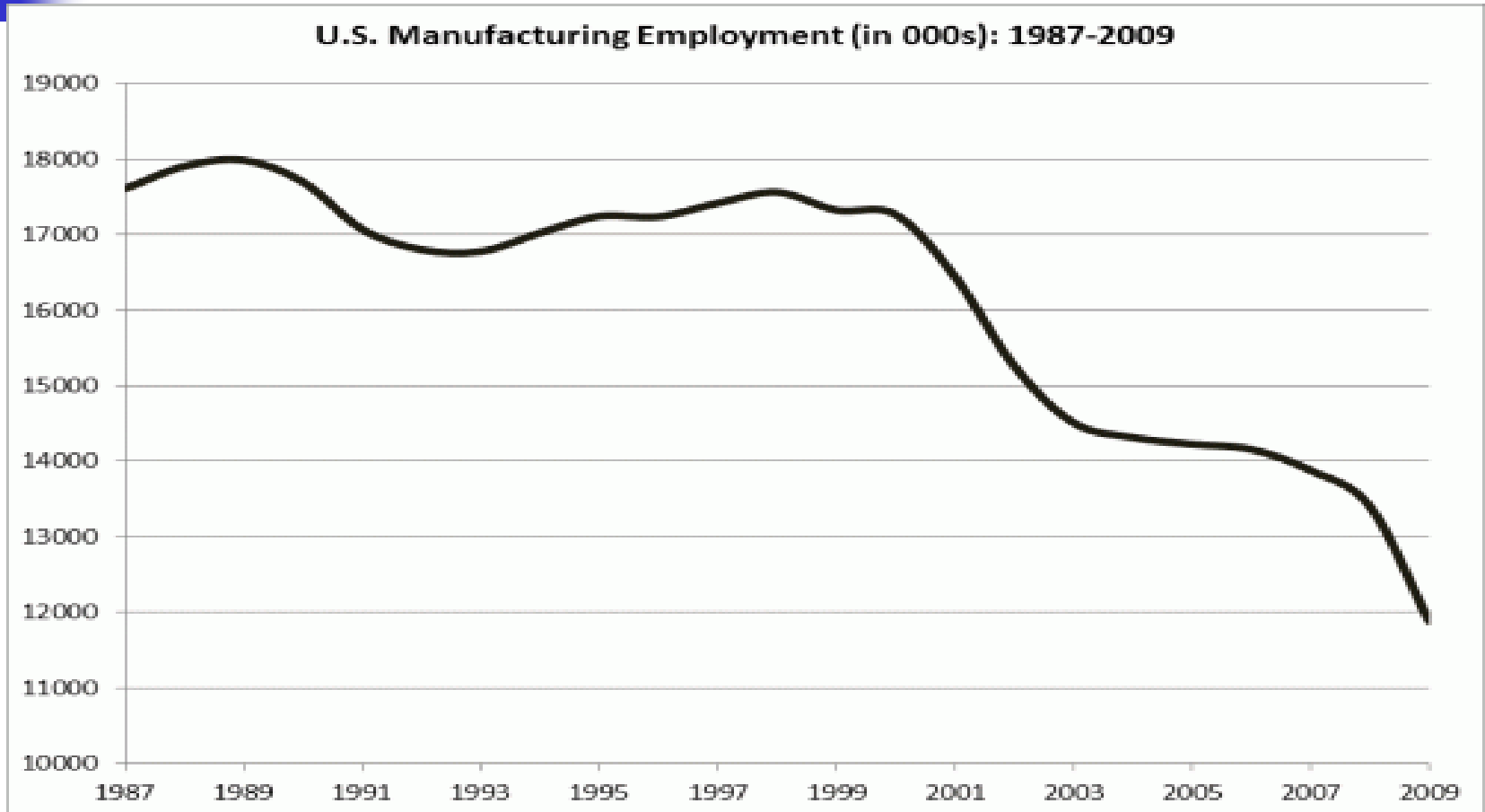
1. Which industry can we say Made in America is the best in the world?
2. Healthcare, Hospitality, Food, Education, Manufacturing, Automotive, Computers...?
3. What "Made in USA" can we find in stores?
4. Changed from "Made in USA" to "Made for USA" around the world.

Why?

State of American Economy



The Manufacturing Challenge



Beginning



Growth



Maturity

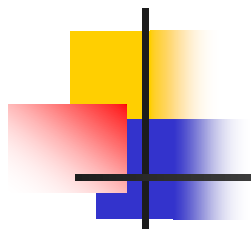


PHOTO: MARK ELIAS/BLOOMBERG VIA GETTY IMAGES

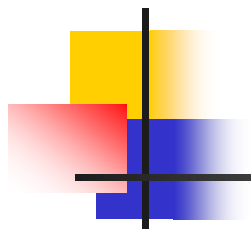


Outsourcing Pattern

- | | | |
|----|----------------------|-----------------------|
| 1. | Problem | - Convenience |
| 2. | Component | - Reward |
| 3. | Subassembly | - Quality |
| 4. | Product line | - Cost |
| 5. | Manufacturing | - Profit |
| 6. | Operations | - Executives |
| 7. | Corporation | - Shareholders |
| 8. | Economy | - Oops! |



What Happened?



The Cost of Poor Quality

It is the cost of our inability to solve our own problems.



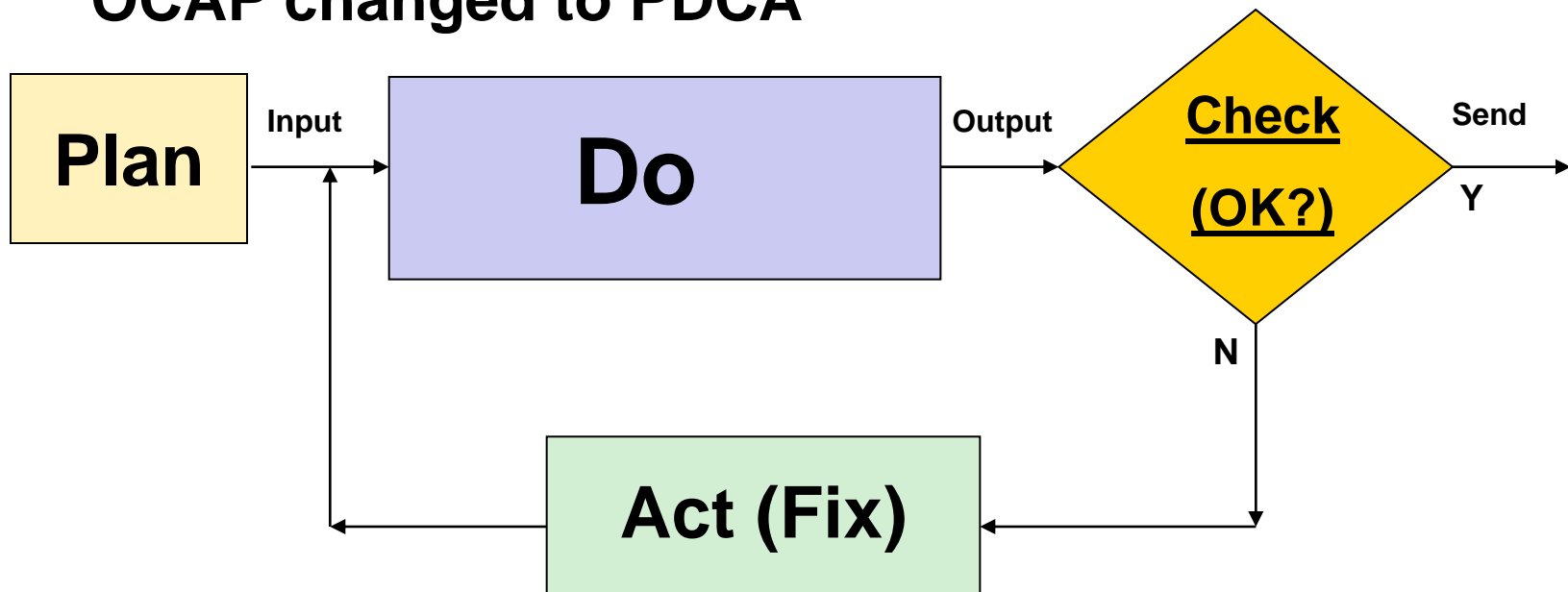
Manufacturing to Tolerances

1. **Designs are for functionality of the product ignoring reproducibility**
2. **Specifications are approximate tolerances instead of precisely determined target and tolerances**
3. **ASME 14.5 – 2009 Geometric Dimensioning and Tolerancing Standard**
 1. **Purpose - To describe the engineering intent of parts and assemblies to produce desired form and fit within limits**
 2. **Content - Specifies Datum, Nominal and Tolerances**
 3. **Focus - Datum and Allowable tolerances**
4. **Set up in productions work within the allowable tolerances**
5. **As a result production output is still outside the tolerances**
6. **This requires extensive testing and results in failures**
7. **Cost of poor quality increases, makes products globally less competitive**



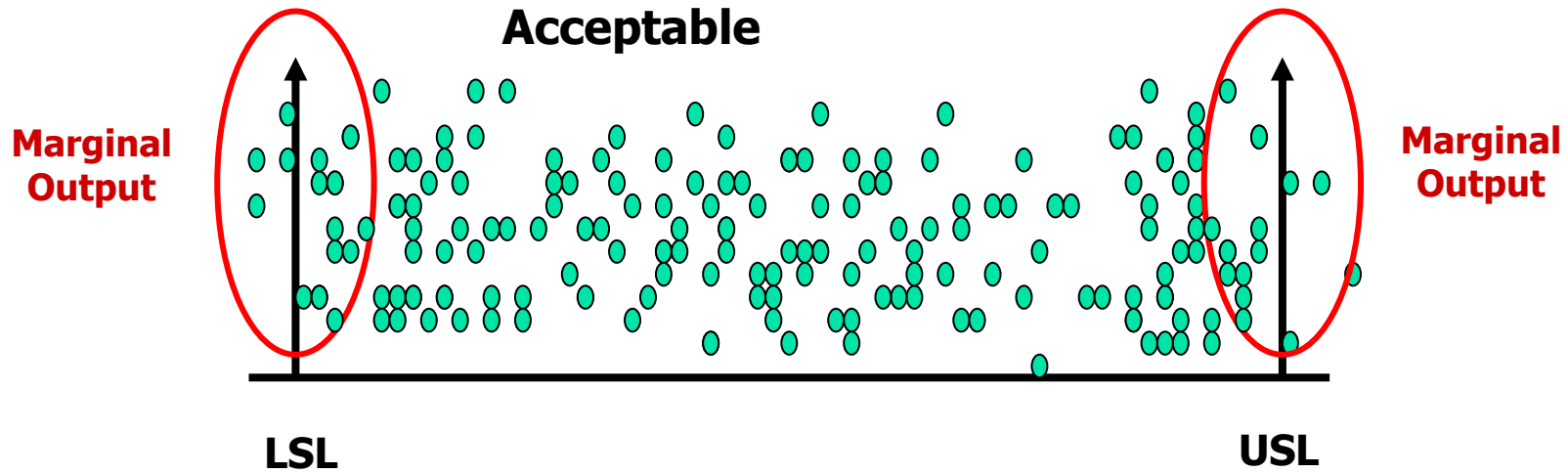
Just Do It (1920's)

OCAP changed to PDCA



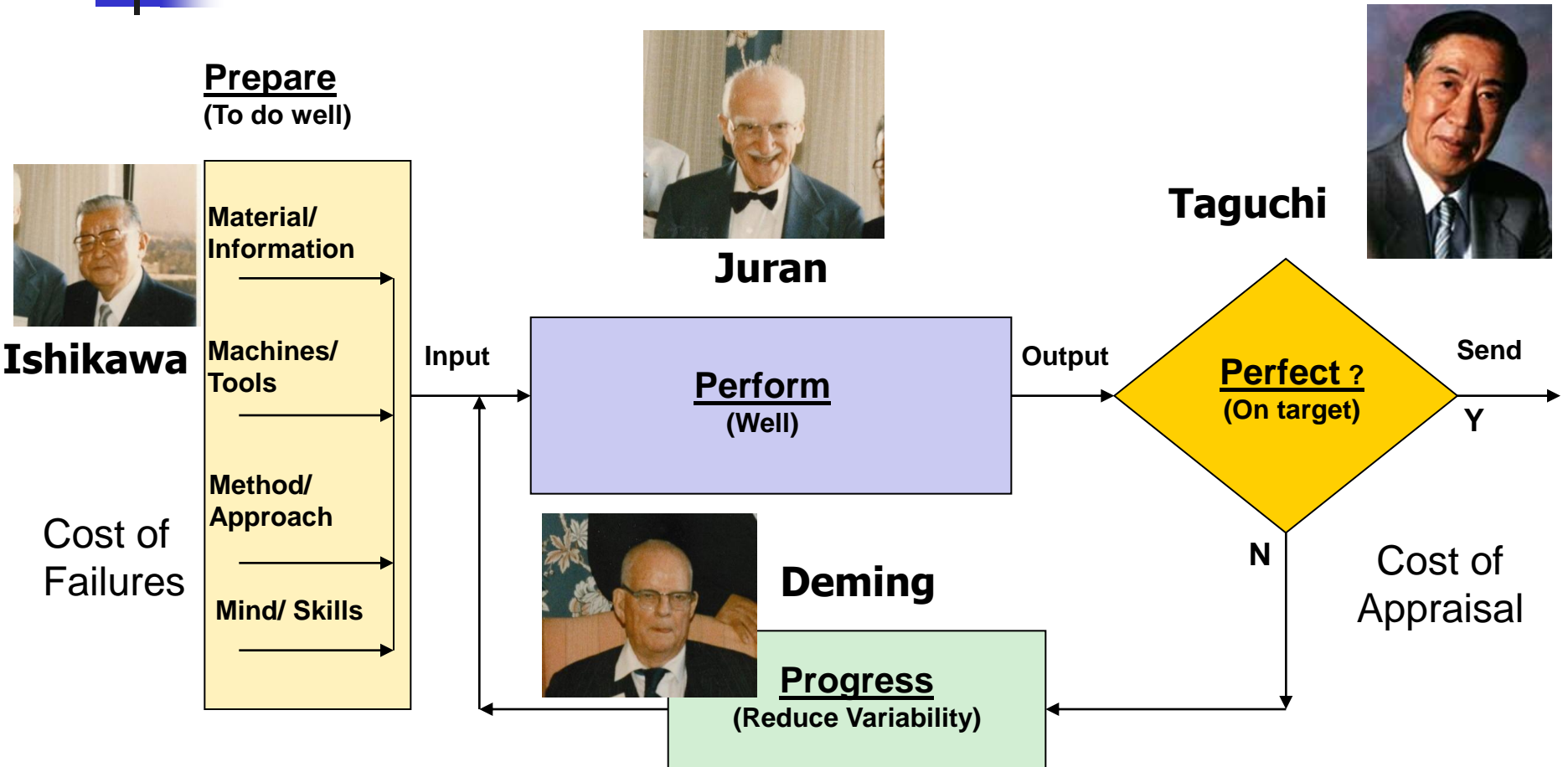
Originally designed for product control.

Producing Acceptable Product

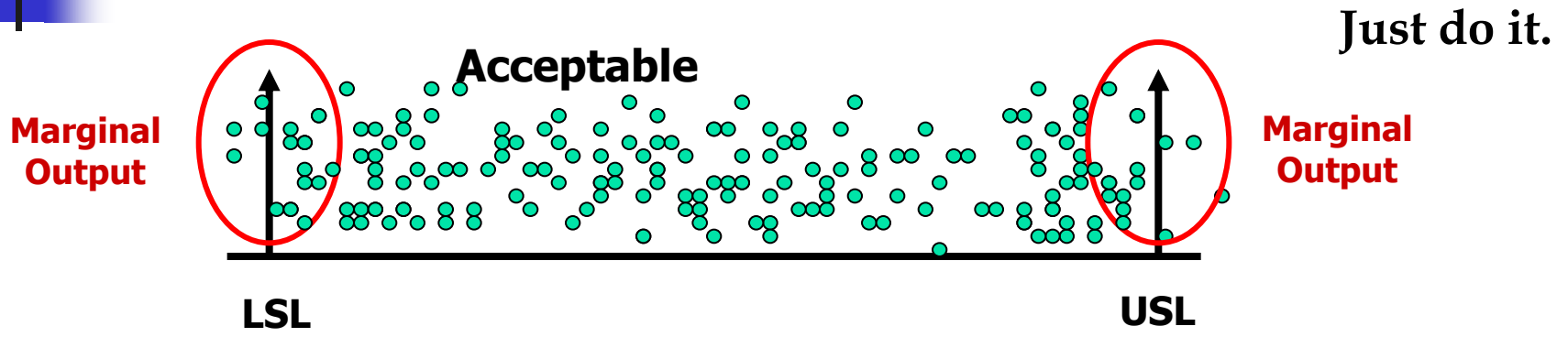


We build to limits, and check for acceptability through inspection within limits

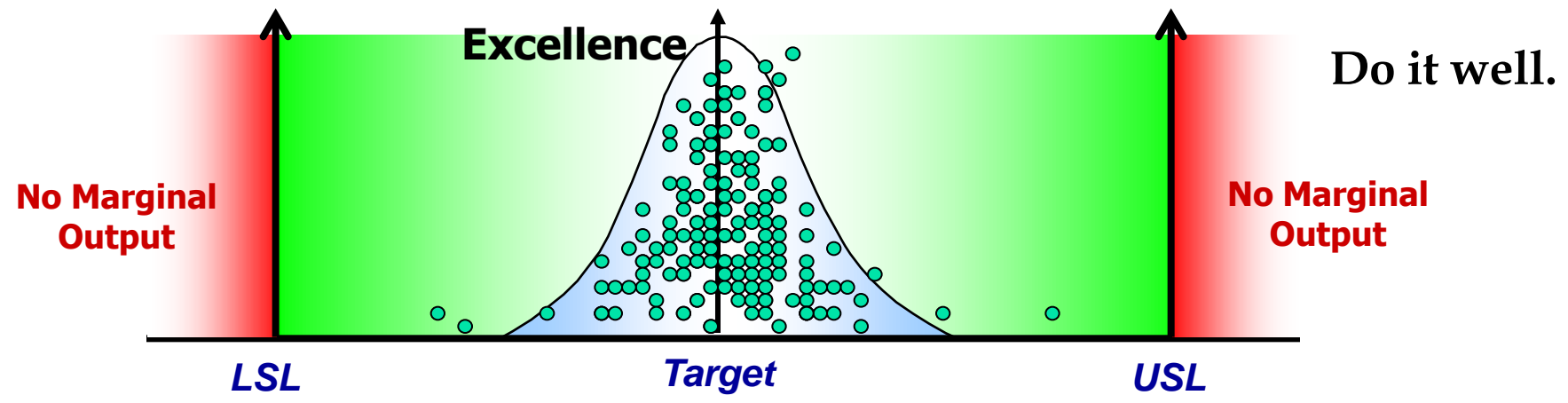
Doing Well



Acceptability (Okay) vs. Excellence



We build to limits, and check for acceptability through inspection within limits

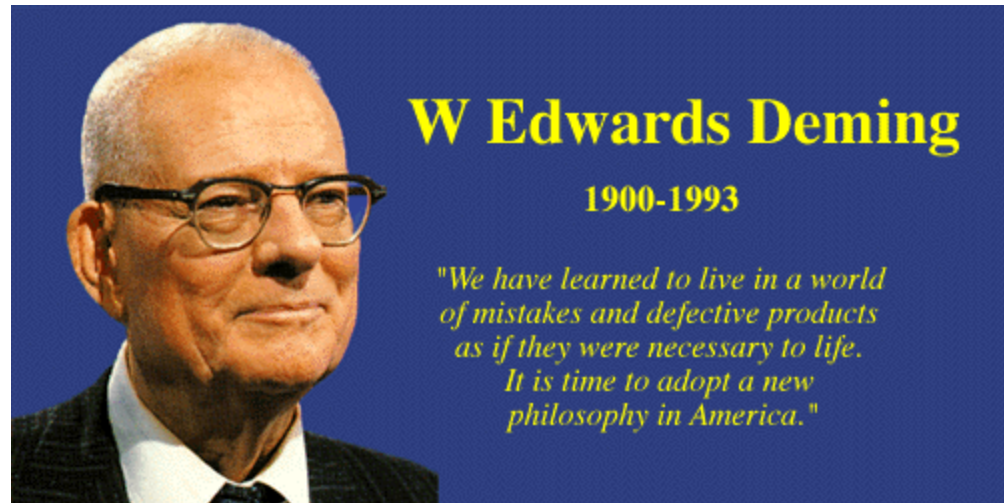


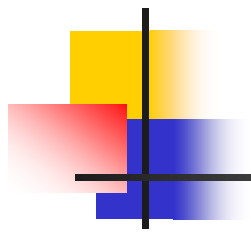


Producing Perfect

- 1. Establish the target performance**
- 2. Aim to build perfectly**
- 3. Perfection means being on target**
- 4. Ship within allowable limits**
- 5. Target is established to build and allowable tolerances are defined to ship the product**
- 6. Our specifications or prints must emphasize the correct role of target and tolerances**
- 7. Producing perfect may cost up to 30% less by reducing the cost of appraisal and failures significantly.**

Great American Quality Leaders

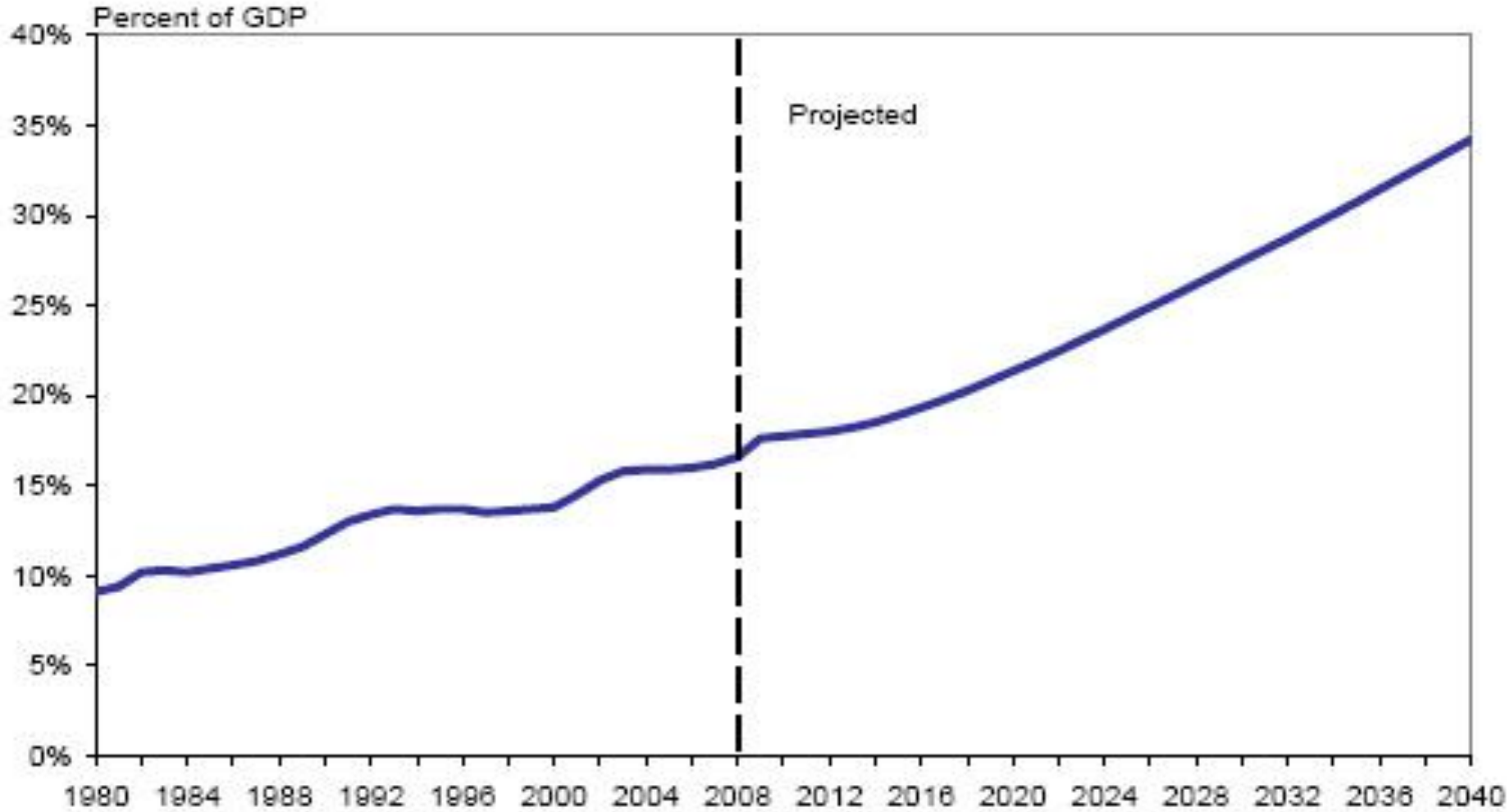




Exercise and playing are as necessary as eating and working. We know health is our most important wealth. Quality of health is the indicator of the 'Quality' as a state of mind.



National Health Expenditures as a Share of GDP, 1980-2040





Understanding Food Energy Needs

First Law of Thermodynamics states that energy is always conserved

**Food Energy = Base Metabolic Rate (BMR) + Exercise + Waste
+/- Weight Change**

- 1. BMR = F(weight, height and age)**
- 2. Exercise: Low - 200, Moderate - 400, High - 600,
Athletic – 1000 calories per hour (approximately)**
- 3. BMI = Weight (Kg) / Height (Meter) Squared**
Healthy BMI Range: 18.5 - 24.9
Optimum reported for men: 23.5 - 24.9
Optimum reported for women: 22 - 23.4
Lower BMI is still beneficial



Our Food Energy Needs

USDA Recommends 2000 calories per day

University of Iowa healthcare website recommends:

1600 calories for sedentary women and older adults

2200 calories for active women and sedentary men

2800 calories for active men and very active women

Eventually, we must monitor our weight for healthy life style

Our weight is a function of calories added and calories burned.



Desired Food Consumption

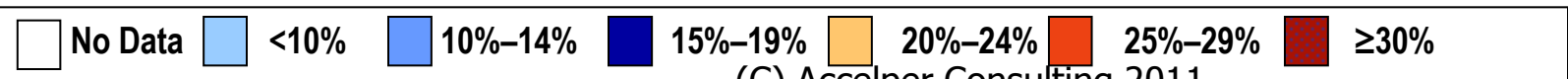
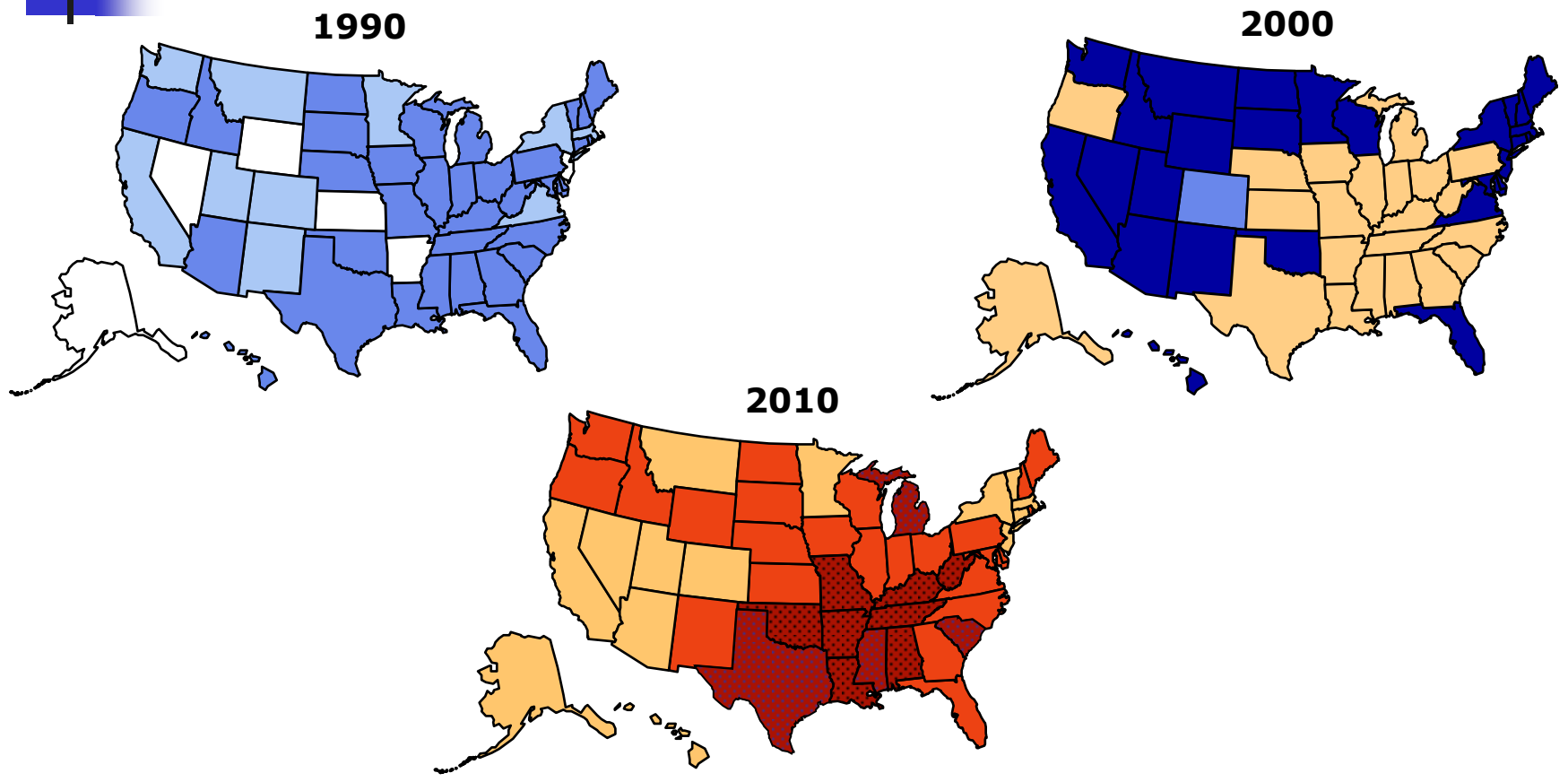
Protein	15%
Fat	30%
Carbohydrates	55%

Fat consumption ranging from 50 – 90 grams depending upon your activity level.



Obesity Trends* Among U.S. Adults

(*BMI ≥ 30 , or about 30 lbs. overweight for 5'4" person)



(C) Accelper Consulting 2011



Effects of Obesity/Overweight

- Heart disease and stroke.
- High blood pressure.
- Diabetes.
- Cancer.
- Gallbladder disease and gallstones.
- Osteoarthritis.
- Gout.

Since people are a critical part of the process, cost of poor health can be equated to cost of ill part.

If cost of poor quality means waste adversely impacting the profit, cost of healthcare is also a cost of poor quality for corporations and for our nation.



Reducing Cost of Poor Quality

A new study brings home what's known as "the French Paradox." Despite France's rich cuisine, the French are decidedly slimmer than Americans. Only 7% of French people are obese, compared with 30% of Americans. The average portion size in Paris was 25% smaller than in Philly.

- A candy bar in Philadelphia was 41% larger than the same candy bar sold in Paris.
- A soft drink was 52% larger, and a hot dog was 63% larger.
- A carton of yogurt was 82% larger.

French Secrets to Staying Slim, U.S. and French Portion Sizes Vary Vastly

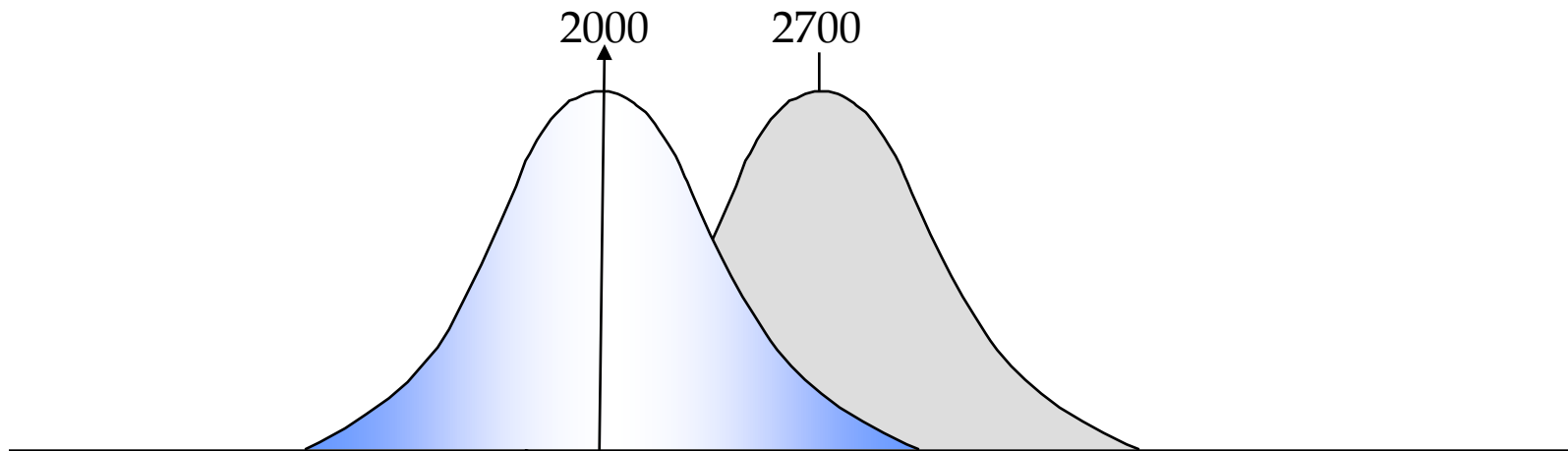
By Jeanie Lerche Davis, WebMD Health News



Our Opportunities

1. Set the target
2. 2000 calorie is not the end in itself instead it is a means to reach our target, i.e., preserve healthy life style
3. Know the process capability
4. Adjust the target to reach the weight
5. Practice, promote and preach healthy life style
6. Healthy bodies have healthy mind, and healthy mind is an actively learning mind
7. Meeting specifications require less intellectual involvement and more inspection
8. Striving for perfection requires active mind, and intellectual engagement

Process Controls



We need to adjust the process, or to change the target to bring population to the desired target.

- Change behavior
- Highlight nutrition, calories and consumption
- Change target, if necessary for the desired result



Observations...

Some Lean cereals or foods may include total and fat calories more than for the normal cereal

All calories are known based on the serving size in ounces or cups. Calibrate your consumption in ounces or cups

In addition to nutrition, pay attention to calories. You can easily avoid some major calorie traps

Eating everything a little is better than eating a lot and swallow pills



Keep Your Score

Using a web-based or phone-based Apps helps. I started using LoseIt. www.loseit.com. It worked for me great!

The screenshot displays the Lose It! website interface. At the top, there is a navigation bar with buttons for Home, Screenshots, FAQ, and Support. Below this is a summary table:

Budget	Food	Exercise	Net	Under
2,341	2,106	-130	1,976	365

Below the table, there is a section for 'Breakfast: 448' with a search and add food button. The items listed are:

- Eggs, scrambled
- Juice, orange
- Bacon, brkd/pan fried/rstd

Next is 'Lunch: 511' with items:

- Sandwich, turkey ham che
- Tea, iced, lemon, swtnd, r

Then 'Dinner: 641' with items:

- Chicken, broiler/fryer, bre
- Broccoli, stmd
- Potatoes, w/skin, baked, med, 2 1/4"-3 1/4" 1 Each 163

On the right side, there is a 'My Plan' window showing a line graph of weight loss progress. The graph shows a downward trend from 144 lbs on 2/26/2010 to 132 lbs on 5/16/2010. Text above the graph states: '↓ 12 lbs. since Feb 26, 2010. Your goal is to lose 15 lbs.'



Quality Professionals

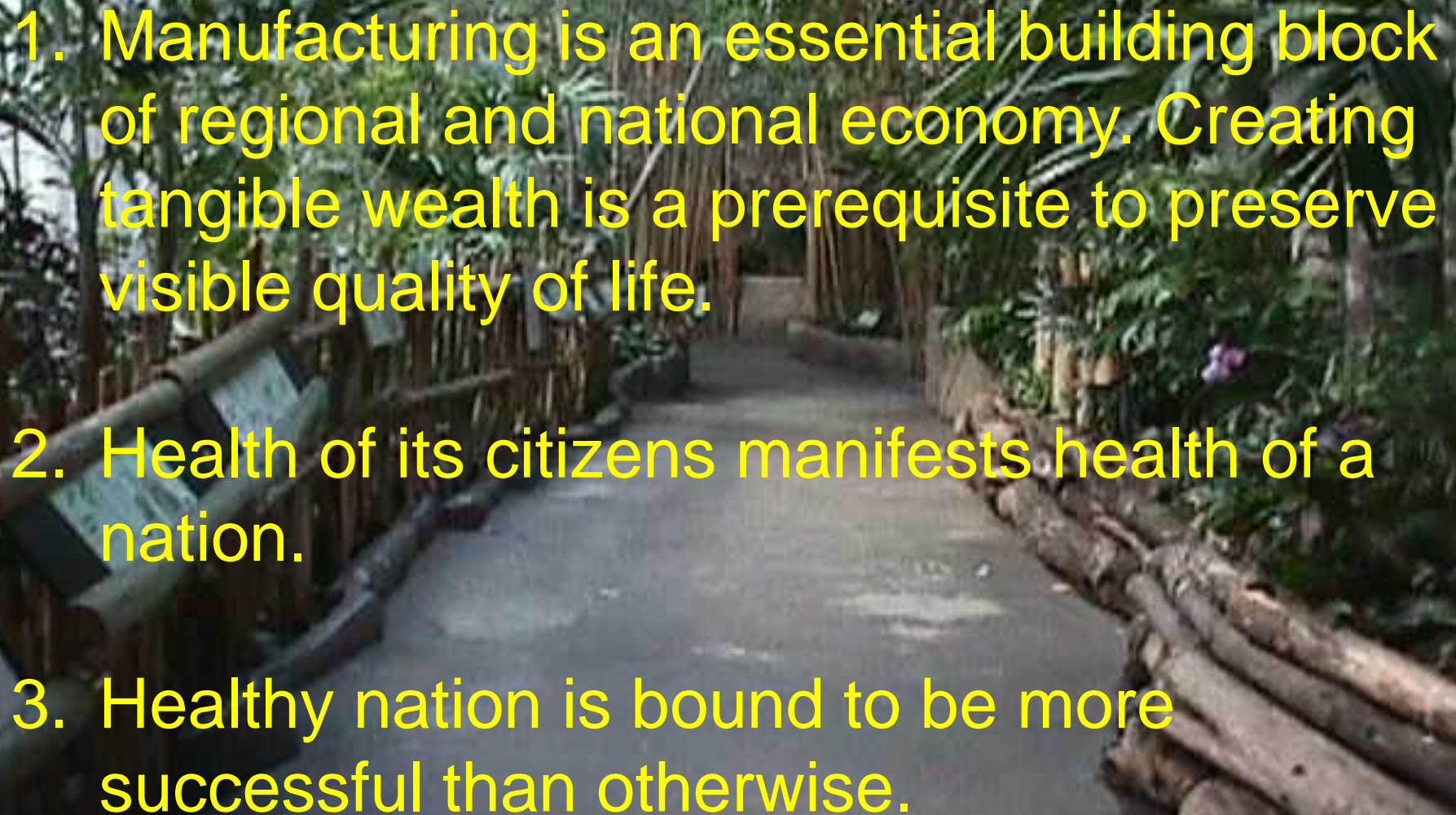
- ASQ is a global community of experts and the leading authority on quality in all fields, organizations, and industries.
- As a professional association, ASQ advances the professional development, credentials, knowledge and information services, membership community, and advocacy on behalf of its more than 85,000 members worldwide.
- **As champion of the quality movement, ASQ members are driven by a sense of responsibility to enrich their lives, to improve their workplaces and communities, and to make the world a better place by applying quality tools, techniques, and systems.**
- Quality Professional's Mantra – Make problems visible till the problems get fixed
- Quality Professional Ethics – Practice what we preach



Conclusions

This presentation:

1. Shares significance of quality in manufacturing and healthcare due to lost jobs and cost of healthcare
2. Identifies opportunities for improvement
3. Challenges quality professionals to practice quality in personal and professional life to reduce the cost of poor quality

- 
- A photograph of a lush, green indoor garden or conservatory. The scene is filled with various tropical plants, including palm trees and large-leafed foliage. A paved path winds through the center, flanked by wooden railings made of logs. The lighting is bright, suggesting a well-lit indoor space. The text is overlaid in yellow on the left side of the image.
1. Manufacturing is an essential building block of regional and national economy. Creating tangible wealth is a prerequisite to preserve visible quality of life.
 2. Health of its citizens manifests health of a nation.
 3. Healthy nation is bound to be more successful than otherwise.



Business Innovator Certification

Thank you!

*“I believe creativity happens, but I also believe that Mr. Gupta has helped uncover a way to make innovation happen.”
- Dipak Jain, Dean, Kellogg School of Management*

For more information, please contact

praveen@accelper.com

Toll Free: (800) 680-0700

Tel: (847) 884-1900

www.accelper.com

www.ibusinessinnovation.com

www.businessinnovationconference.com

