

Performance Measurements

Choices For Success in Business and Life

Dr. Frank Wolf



Download free books at

Dr. Frank Wolf

Performance Measurements

Choices For Success in Business and Life



Performance Measurements: Choices For Success in Business and Life

1st edition

© 2015 Dr. Frank Wolf & bookboon.com

ISBN 978-87-403-1079-5

Contents

	Introduction	7
1	Management and Measurements	8
2	Workplace Measurements for Corporate Offices	13
3	Workplace Measurements for the Service Sector	20
4	Workplace Measurements in the Manufacturing Sector	29
5	Measurements in the Public Sector	37
6	Measuring Non-Profit Organizations	45



Discover the truth at www.deloitte.ca/careers

Deloitte.
© Deloitte & Touche LLP and affiliated entities.



7	Measurements for web-based Businesses	54
8	Happiness, Social Media, Cause & Effect, Indexing and Employee Self-Measurement	60
	Summary	71
	References	73
	About the Author	75

© 2013 Accenture. All rights reserved.

be > your degree

Bring your talent and passion to a global organization at the forefront of business, technology and innovation. Discover how great you can be.

Visit accenture.com/bookboon

Be greater than.
consulting | technology | outsourcing

accenture
High performance. Delivered.



Objectives

There is a saying that if you don't measure it, you can't manage it. In our time where social media, the Internet and all matters digital play an increasingly important part of commerce, this rings especially true. Saying this in another way, our jobs and our companies and our commerce have drastically changed, all of which requires re-examining our measurement regime.

This book is about re-examining the way we measure commerce and our personal work progress as well. It is intended for corporations to motivate their staff towards reaching objectives by taking appropriate measurements to chart progress. The chapters are appropriate for working persons in industry, non-profit organizations, and government agencies. The book covers the fundamentals of major disciplines in management, and each chapter contains a brief case to illustrate key points.

All chapters end with a series of questions to encourage the reader in imagining how new measurements could help his or hers' business and personal situation at this point in time.

Introduction

***If you can't measure it, you can't manage it.* – Business folklore**

Human learning has taken place as soon as behavior has changed for the better. The only way to actually know that is to take measurements.

The fundamental definition of measurement is that it describes size, dimension, capacity, proportion or judgment of something. This definition is then applied to length, weight, volume, time, mathematics and physics, music and law, and endless other endeavors. We live in a culture that is obsessed with seeking precision, and we use numbers to find it. Once we have it, we feel in control. If the numbers are what we expect, then we feel good and reward ourselves for having achieved it. Such numbers can represent our cholesterol, a test score for a professional certificate, calories of the last lunch, return on investment, price-earnings ratio and the latest customer satisfaction survey results done over the Internet. Of these, length is the oldest measure and it arose out of the need of surveying land. In fact, one can argue that all measurements have arisen out of a physical need to have them. For example, an inch is a thumb, a foot is self-explanatory, a yard is a human pace and a mile was defined as one thousand paces, or what the Romans called *milie passus*.

In this book, we are restricting ourselves to measurements used mostly in the conduct of business in the 21st Century. Ultimately, it's numbers that make our reality visible. While graphs, charts, indices, and ratios are all forms of numbers, just having them does not guarantee that those fully describe what we need to know for continuous improvement in our professional lives. The book is intended to have a pay-off in that the reader may be motivated to invent new measurements for his or her personal job productivity. The reader should explore how current measurements describe his or her life and work and know what these are, understand the context in which these are used, and understand a little bit, of where those measurements came from.

1 Management and Measurements

Tell me how you are going to measure me and I will tell you how I will behave. – Eli Goldratt

What do managers actually do? If we accept the textbook definition, then managers are engaged in planning, organizing, leading, and controlling. This is true for public, private-, for profit, not for profit organizations and for government as well. However, not everybody will agree with this definition, because if one took an hourly log from a large sample of managers and categorized their efforts, one may find out that this is not how most managers actually spend their time. Other business thinkers define the role of management as knowing what to change, knowing what to change to, and being able to make change happen (Goldratt, 1984). For our purposes, we accept the planning, organizing, leading and controlling definition and look at the need for measurements in each of these categories.

Planning

Planning involves searching for, and then identifying, the appropriate goals for an organization. How to get from here to there is a forward-looking activity and it's called strategizing. We do this in the belief that we can have an effect on our own future, but we can't leave this to chance because: "if you don't know where you are going, any road will take you there." Following a strategy is executing a cluster of decisions relative to the goals we are pursuing.

So, how does one measure planning activities?

- Time in hours, day, weeks and years, applied to project deadlines and milestones.
- Resources, dollars, people skills, service capacity as in ability to deliver a service over a period of time.
- Attainment of a quantifiable goal, or steps leading to it.

For example, XYZ Corporation follows the strategy of being the low cost producer in a given market, and in order for this to actually happen XYZ has to increase productivity, which is like saying it has to produce more with less. To measure productivity we look at the ratio of output to input. It is not too difficult to understand that an increasing positive number over time means we are producing more with less, and that means we are a lower cost producer.

$$\text{Productivity} = (\text{Output}) / (\text{Input}) > 1$$

Now let's replace "XYZ Corporation" with "Mr. or Ms. XYZ" and observe the same principles in operation.

Organizing

Managers organize themselves in order to execute a project, and we give it structure by determining who does what and when and how. Ultimately, the aim is to have deliverables that a situation calls for.

- If we organize ourselves around a product, then our focus may be on raw materials, engineering and product design, product marketing, manufacturing and distribution.
- If we organize ourselves around a geographic market, we may think of markets such as the European Union, South America, etc.
- If we organize ourselves around the market place, we focus on various quantifiable needs of clients in markets such as government, textiles, automobiles, etc.

The term *organizational structure* refers to the reporting relationship to accomplish tasks and the motivation for its members to actually do those tasks well.

The measurements we choose have to meet the needs of managing a product, or a marketplace or geography. In the case of product measurements, one may think of meeting quality standards related to appearance, durability, functional excellence and original specifications. Quality programs like Six Sigma try to achieve near zero defect rate, or 1 in 3.4 per million, by measuring nearly everything continuously. In the case of market measurements, segmenting large customers from small customers, and government from commercial clients, may direct management to the proper focus on each segment with respect to profitability and client needs. In the case of geography, the need for designing the proper measurement can be found in complying with international trade agreements, standards for safety, culture, and packaging and marketing.

Leading

Leading involves the clear articulation of an organizational vision and energizing the organization to follow in that path. A leader encourages participants into a high level of performance, and demands organizational commitment to follow that vision. Business leaders often have charisma, charm, influence, persuasion, and really good communication skills to turn participants into passionate followers. Leaders come in all levels of merit, ranging from Mother Theresa to Joseph Stalin. In business, the leading principles are often outlined in the form of a carefully worded corporate vision statement. These statements take the form of who we are, what we do, for whom we do it, and why we are better than anybody else. Power to call the shots is a key attribute to leadership, enabled by:

- Being in the position to dispense rewards in the form of promotions and salary increases (e.g., human resources chief).
- Being able to make or negotiate the rules and enforce their execution. In military leadership, this may be a necessity by the nature of their objectives, executed by commanding officers.

- Being an expert in a critical skill, like Werner von Braun in rocketry.
- Being in the key position to make decisions, or being the major shareholder, like Sumner Redstone of Viacom.

Measurements for leadership are less precise than for example, pounds per square inch. A common term used is “leadership effectiveness,” which measure is usually an assessment tool. That tool is a psychographic scale derived from survey questions and easily observable characteristics. When good leaders prevail, the results can be remarkable, see Steve Jobs of Apple. Conversely, many business leaders fail in some measure, some criminally, as did Dennis Kozlowsky of Tyco Inc. Good leaders possess all of the following characteristics:

- Leadership style; like the day-to-day actions, by which one can observe the leaders’ emotional intelligence.
- Leadership potential, like stress tolerance and treatment of fellow workers.
- Leadership values such as ethics, being an example, aspirations, delegation, and team work.

Now: How would you assess your leadership potential, or that of your boss? And honestly now, why would you want to be a leader?

Controlling

Controlling means critical evaluations of performance, usually on a continuing basis. If we want to control quality, we may look at control charts to observe a variable move within control limits over time. If we want to control the use of funds against a budget plan, we look at spending year to date. What all control systems have in common is feedback; we receive an observation from the field and make appropriate adjustments to keep on the right path.

We also need to consider the concepts of effectiveness and efficiency as control measures.

Effectiveness measures the appropriateness of the goal we are pursuing.

For example, for McDonalds to introduce a breakfast service is effective because the meal lends itself to fast food service, there is a market need, and the facilities are already in place. The effectiveness measure is always related to the purpose of the organization itself.

Efficiency defines how productively we are in doing our work. We want to use as little as possible of labor, of raw material and time to do our work; in fact, we want to be productive, which stated earlier is defined as the ratio of output to input.

- Efficiency measurements for labor refer to cost per hour, skill level, and availability.
- Efficiency measurements for raw material can include its costs to buy and store, sustainability, its future cost, and inventory cost.

Case 1: The Need to Invent Your Own Measurement

A small manufacturing company operates under one roof in an industrial park. James is in charge of sales, and Charley is head of production. The company has a few very large clients who pay their bills in 60 days or more. It also has a lot of small client businesses who are fairly conscientious with respect to their financial obligations and pay 30 days of invoice. Christmas bonus payments are just three months from now, but Charley and James have a problem!

Charley's personal performance is evaluated by efficiency, that is # units produced per period, \$-cost per hour and per unit, and standard cost. Standard cost in this case is defined as the best cost performance the plant ever achieved, measured by product cost and machine utilization. Machine utilization is the productive time of a machine, as compared to time not in use. Charley instinctively pushes for taking care of the largest customers first, because that implies he has long production runs. Long production runs have no set-up time between jobs, in other words, high machine utilization, all of which makes his numbers favor a large bonus.

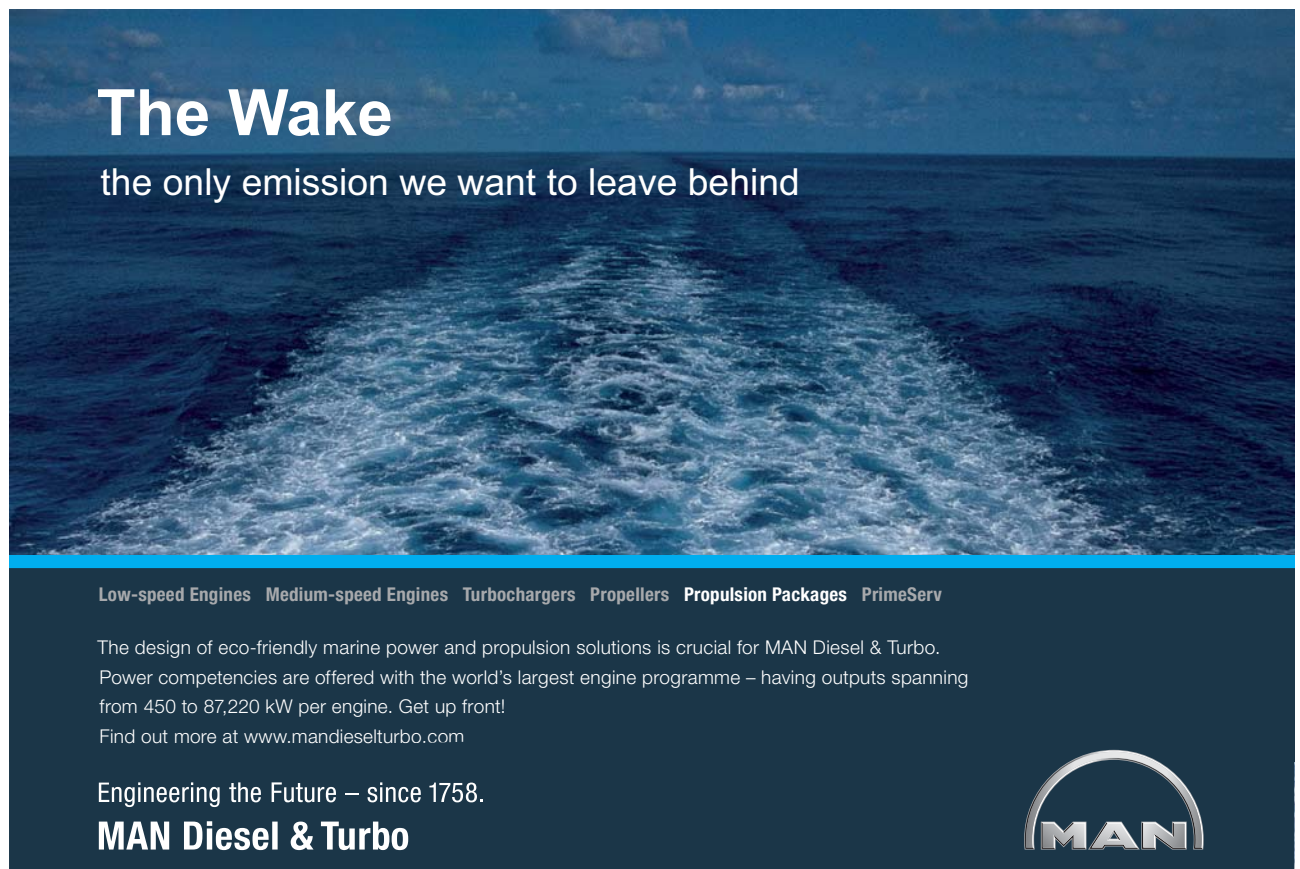
James' performance on the other hand, is evaluated on customer satisfaction. Long production runs favor large clients and result in small customers having to wait and, thus being unhappy. Short production runs permit small clients to receive timely deliveries. James' performance measurements come from customer satisfaction surveys in which large and small customer responses carry equal weight.

The question is to get to the root of the problem, whom would you favor or what measurement would you invent?

Hint: Consider that the objective of the business is to make money. That is the whole business, not Charley or James alone. Sub-optimization in other words does not work. Perhaps "throughput" is a good idea, throughput being all that which reaches the invoice -stage as early as possible.

Chapter 1 Questions

1. Presume you are a young person and wonder about life's work and a suitable career plan; ask yourself "is what I am doing today helpful to what I envision or hope to do later in life"? The same applies to a middle aged person because it is unlikely that you will be requiring today's skills when approach retirement. Let's say you are about 65 years old and face the good prospect of living another 25 + years, how can you remain relevant and healthy and measure that?
2. You would like to become a leader in your field. Apart from aspiring to have perks, also consider the responsibility like custodianship of assets and other peoples' money. How would you like to be judged?
3. Can you articulate your current job objectives and how these are congruent with the enterprise you work for? How do those objectives relate to your personal ones, like becoming financially independent? In answering all those questions, what measurements come to mind?




The Wake

the only emission we want to leave behind

[Low-speed Engines](#) [Medium-speed Engines](#) [Turbochargers](#) [Propellers](#) [Propulsion Packages](#) [PrimeServ](#)

The design of eco-friendly marine power and propulsion solutions is crucial for MAN Diesel & Turbo. Power competencies are offered with the world's largest engine programme – having outputs spanning from 450 to 87,220 kW per engine. Get up front!
Find out more at www.mandieselturbo.com

Engineering the Future – since 1758.
MAN Diesel & Turbo



Click on the ad to read more

2 Workplace Measurements for Corporate Offices

Good counselors lack no clients. – Shakespeare

Human Resources

Corporate offices perform functions that are quite different from those of the production floors, laboratories, government offices, or non-profit organizations. Departments like human resources, information technology, finance, marketing, and legal services do not produce a physical product. In fact, they are called *functions*. In this chapter, we will investigate what these departments actually do, why they do it, and how they measure themselves, and then ask ourselves whether the chosen measurements support the desired results? Below is an example of the elevated role of a human resources (HR) manager.

Time Period	Title	Function	Measure What	Measure Why
< 1980	Personnel Manager	Payroll, Benefits Recruitment	Skill sets, and pay scales	Equity and Motivation
1980–2000	Vice President of Human Resources	Additionally: benefit Containment, appraisals, Feedback, succession plan	In the US, Compliance with Equal Pay Act, Title VII, Age discrimination, Civil Rights, Family Medical Leave Act, Incentives and benefits	Labor is the highest component in a typical company
>2000	Chief...	Plus HR policy	Being ready for future skill needs	Compete for talent

Table 2.1 Organizational elevation of the Human Resource Function

Elaborating on the “Measure What” column, everybody knows that money motivates, but the relationship between amounts spent and outcomes are complex. It is also recognized that skilled workers like certified accountants and engineers earn more money than workers who lack degrees and certification. Many corporations have a scale for salary payments recognizing skill levels and seniority.

Grade segmentation for airline flight crewmembers is a function of accumulated flight hours, FAA licenses, training, complexity of airplanes, etc. For a US government worker, there are about 18 pay grades ranging from entry level to the top three being considered executive level. Within these grades there are “steps” that allow workers to be promoted in small increments. Other factors influencing pay scales are industry standards and geographic differences. Those differences develop naturally in the market as a result of demand and supply.

Innovation is even harder to measure than other HR issues, but here is an idea: Take the sales of any relatively large public company and determine how much of that revenue is the result of products that were introduced in the last five years? If the answer is zero, those folks are probably not very innovative. On the other hand, if that number is 40 percent, it can be a sign of healthy organizational renewal.

The overarching goal of measurements in human resources is to meet the corporations' strategic objectives, today and in the future. Today, HR leadership is a policy level undertaking and heavily dependent on good measurements. These HR measurements have to support the corporate strategy. For example, if a corporation is adopting a new technology, then it has to be anticipated that the right workers' skills will be deployed in the right place at the right time. The measurement parameters are skill, time, number of people, and money, among others.

Information Technology

O! It is excellent to have a giant's strength, but it is tyrannous to use it like a giant – Shakespeare

Information Technology (IT) is how we acquire, organize, store, arrange and transmit information. Data and information is not the same thing. Data are just points of an observation, like dollar sales last month; it is neither summarized nor analyzed. For example, a retail clerk may wonder why product A occupies 4 feet of store shelf while a competing product B occupies only 2 feet? For products A and B the store manager knows three items of data such as (a) the # of units sold per week, (b) the number of feet of shelf space dedicated to each, and (c) the profit per unit. Turning those pieces of data into useful information, the manager periodically computes the following:

$$\begin{aligned} & (A\text{- units sold}) \times (A\text{- profit per unit}) / (A\text{- feet shelf space occupied}) \\ & (B\text{- units sold}) \times (B\text{- profit per unit}) / (B\text{- feet shelf space occupied}) \end{aligned}$$

This results in weekly profit per foot of shelf space for products A and B. Now why would that be useful? By definition, shelf space is finite and that is what the store manager actually sells, namely access to products. Our store manager is rational, she wants to maximize profit, and therefore needs this information. Many consumers would be surprised to know that major items in big box retail outlets are theoretically owned by the manufacturer at the time of purchase. Ownership sometimes changes after the checkout counter transaction is completed. The game changing power of measurements in our little example is that the market power has shifted from the manufacturer to the retailer as a result of new insight. Raw data has now become valuable information.

If we define IT (Information Technology) as all the techniques and methods of acquiring, organizing, storing, manipulating and transmitting information, we realize that this field is huge. Among its measurement concepts are quality, timeliness, completeness, and relevance.

1. **Quality:** Quality of information refers to its accuracy and reliability. Inaccurate information leads to bad decisions, and if the information is not reliable, then clients won't use it. The nuclear meltdown of Three Mile Island in 1970 was caused by controlling computers indicating sufficiency in cooling water, when in fact that was not the case. Poor data quality!

2. **Timeliness:** This concept refers to the attribute of whether information is available when needed. Living in a world of real time access to data, we find that the airlines review ticket prices frequently, all based on demand and supply. Airlines and hotels also make overbooking decisions based on the probability of no-shows. A technique called Yield Management balances the probability of no-shows with overbooking and thereby achieves timeliness to maximize profit. Yield Management refers to a point in time; when that moment is gone the information is old.

3. **Completeness:** This concept implies that managers shall have all relevant information at their fingertips to make good decisions. That condition rarely exists, and in addition, one hardly knows what "all information" really means. Additionally, if all information could be presented, it may be too much to handle by our finite sized brains. Also, we don't have enough time to analyze all options before a decision has to be made. Unknowns in business are called risk factors, which can also be quantified. Stress testing banks for having adequate capital under future adverse market conditions, is to make sure the local ATM keeps working, is an example.

SMS from your computer
...Sync'd with your Android phone & number

FREE
30 days trial!

Go to
BrowserTexting.com

and start texting from
your computer!

BrowserTexting



4. *Relevance*: This measure answers the question of whether the information is useful under a given circumstance; it is best determined by the people who ask the question. For example, the production statistics for an agricultural commodity in a region in which it is produced is not relevant for a region in which it is not used.

Marketing

He was never precise in promise keeping. – Shakespeare

In marketing, we deal with measurements that address efficiency and effectiveness of sales. Efficiency tells us how well and how productive our resources are being used. Effectiveness says something about the appropriateness of the goal we pursue and to which we apply resources. In addition, feedback is necessary for future projections and quantitative forecasting, as well as qualitatively forecasting through focus groups or customer surveys. This subject came up in our mini case from the previous chapter.

Efficiency measurements focus on cost and profits, which can be broken down by product line, geographic region, market segment, customer type, order size, and changes that have occurred over time. This is the dicing and slicing that analysts do in order to understand what is moving and what is not. It can be accomplished by simply sorting raw data, among several other methods. A marketing measurement can be invented that is a composite of many other measurements. Take the Experience Curve, for example, which is closely related to the Learning Curve. The Experience Curve implies that the per-unit cost to produce a product will decline up to a limit, as production volume becomes larger. The Learning Curve implies that the time to perform a task decreases with repetition.

$$T_n = T_1 * N^{\ln(b / \ln 2)}$$

where (b) is the learning percent between the first observation T_0 and the following observation T_1 . This phenomenon is readily observable in today's consumer market in falling prices of electronic gadgets. In the Experience Curve case, *cost* per unit falls a certain percentage point each time cumulative production doubles. For this to actually happen, sales obviously have to double too.

For marketing decision purposes, we now can surmise the following logical sequence of events:

- 1) That a high volume producer can have a low marginal cost as a result of experience
- 2) Which in turn influences the product price, and
- 3) The lowest price leads to higher market share and the best ROI for that producer.

This is an example in which five measurements are serially linked, namely unit cost, production volume, price, market share, and ROI (return on investment). The final measurements, ROI and market share, define the goal of the firm, its purpose of being. This is the reason the firm takes risks, and measures those in order to minimize risk.

Effectiveness measurements answer the question relative to the appropriateness of the goals. A goal that addresses the corporate mission or Vision Statement can be considered appropriate. A poorly stated marketing goal would be “let’s find customers to buy our stuff”. A better expression is to aim for 5 percent market share, based on attributes customers really want. Focus groups can be employed to measure attitude towards a new product, for example.

Measurements to justify the effectiveness of the cost of television- or print advertising are called *impressions* (viewings). The theory is that more impressions are better than fewer impressions. For example, consider the cost to advertise on a Super Bowl game vs. a local football event. Marketers will carefully study their potential audiences with respect to age and purchasing power, education and geography in order to tailor a good fit for the pitch. In Internet marketing, clicks and banner ads have a comparable interpretation. However, marketing can be as much art as it is a science. Short-term metrics are often not representative; and analysts have to ask themselves the following questions relative to gaming of the system:

Does social sharing measure content?

Is achieving high traffic the real purpose, and does it imply business success?

Are election survey results a function of who asked the questions, and picked the audience?

Professional Services

The law hath not been dead, though it hath slept. – Shakespeare

Under the professional services rubric we include corporate law departments, medical- and first aid departments, research and development laboratories, public relations, economics, security-brokers and dealers; in other words, functions that often require a license. These folks may be hard to measure because they often don’t produce anything that is directly countable. Measuring professional services can start with asking a number of questions, like:

1. Define how value is added!
2. How, for instance, the law department benchmarks itself against peers?
3. What key performance indicators (KPI) are the drivers?

Most likely, a corporate attorney practices a specialty such as litigation, labor law, intellectual property, patents, etc. Measurements for such intangibles are called KPI, that is, key performance indicators. KPIs measure how well we service customers, what level of service is being delivered, the impact on external clients, and efficiency. The KPIs can be values on a 1–5 point scale and can generally be derived from survey instruments.

In benchmarking, we compare ourselves to highly regarded peers. How well does our law department, for example, stack up against the best in the industry? An electronics industry survey determined that firms in this industry employ about eight attorneys for every billion dollars of revenue. To automatically presume that employing fewer attorneys is better without first seeking additional information, is not necessarily sufficient. If one accepts 8:\$1B as a standard ratio and finds deviation, then asking additional questions is called for. New benchmarks and new KPIs can be invented to meet the need for new situational metrics. In doing so, one should keep in mind that those KPIs should be easy to understand and use by all, and they should not be self-serving. If a KPI is a ratio, it is best to let the denominator be a factor that reflects operations, rather than one that reflects market performance. For example, ROA (return on assets) equals net income/assets. The denominator “assets” reflects internal operations. A different denominator, such as shareholder return, is not appropriate because it is subject to exogenous market based considerations.

Case 2: “Big Data” is coming to your neighborhood.

If we look around the traditional company offices and study what is being measured and how it is being measured, we see obligatory efforts focused on daily, weekly, or monthly status data being collected, only to feed into quarterly reports for public consumption and compliance. The metrics may pertain to revenue, margins, productivity; and here and there, even social media.

**YOUR WORK AT TOMTOM WILL
BE TOUCHED BY MILLIONS.
AROUND THE WORLD. EVERYDAY.**

Join us now on www.TomTom.jobs
follow us on **LinkedIn**

#ACHIEVEMORE **TOMTOM**



The central idea behind Big Data, as it is called now, is that data will soon be captured in all forms that are either digital, text, web blogs, music, pictures, video, and transaction data. The technologies to capture are data mining and cloud computing among others. Just consider Wal-Mart, it processes 1 million store transactions every business hour. Analytics can be performed on these data to better forecast, to optimize operations by minimizing waste and cost, to maximizing profit, improving quality, and for customer service. These data may also very soon be publically available and relatively inexpensive. For example, new metrics will enable retailers to segment their customers into ever-finer slices and to serve them better through understanding their buying behavior.

Big Data is now a term in the business literature and it evokes the image of Big Brother. As a thinking exercise, consider the following questions:

1. Would near instant knowledge of all aspects of your business improve management decision making? Hint: Consider a managers' possible emotional reaction to a data spike, high or low!
2. In how many ways would a fashion house benefit if they could figure out what teen agers around the world consider to be cool clothes?
3. Since we are facing a Big Data skills shortage in the employment market, what should any company's human resource department do right now to be prepared for a skilled workforce when all that happens? List the skill sets needed in your company, or list the skills you may need to compete next year or soon thereafter!

Chapter 2 Questions:

1. If you are not solely motivated by money, what other measurements would you suggest for yourself in your business?
2. In working to achieve your long term goals in life, have you ever considered intermediate steps? Let's call them KPIs, do you know what they are, should be, or when you have reached them?
3. Do you have a career or business role model? If so, do those role models have a common denominator such as leadership qualities, diversified experiences, speak foreign languages, members of privileged families?

3 Workplace Measurements for the Service Sector

Design is not what it looks like and feels like, design is how it works. – Steve Jobs

In this chapter, we address measurements most suitable for the service sector, which is about $\frac{2}{3}$ of US GDP or perhaps $\frac{1}{4}$ of GO (see Chapter 5). In Chapter 4, we will focus on measurements that are more suitable for the manufacturing sector, fully recognizing that both manufacturing – and service sectors share common approaches to measuring. For example, assume a company makes vacuum cleaners. That is, it creates a product, sells it and transfers ownership for a consideration of money. That aspect is covered in the next chapter 4. However, if that vacuum cleaner comes with a performance warranty and an 800-help telephone line, that part is clearly *Service* and the two are hard to separate. In fact, there is a direct relationship between the quality of the product and the cost of the service warranty. Generally, the better the quality of the product, the lower will be the cost of the warranty.

The Service sector covers retail, health, transportation and many others. Services can be characterized by: (1) the fact that in Service both the provider and the customers share in the act of rendering services, and (2) that the services are instantly consumed. Services are mostly intangible, which means that one can't pick them up and drop them on the floor.

The assessment of Services takes place during the Service delivery process and the emphasis on what is called the Service Gap. The Service Gap measures the perception of the service received in relation to the desired expectation by the client. This is often done by surveys immediately following a transaction. Any service provider aims to narrow that “gap” and to find remedies through market research, better communication between management and front line workers to establish target values for future performance standards. One popular instrument is a multi-item scale called SERVQUAL. It addresses reliability, responsiveness, assurance, empathy and tangibles.

In this chapter, we will shine some light on the measurement approaches relative to quality, sustainability, and the quantification of work itself.

Service Quality

Great business thinkers have pondered the question of what constitutes quality and how to measure it for over one hundred years, and they all have come up with different answers. The early work of Walter Shewardt, Edward Deming, Joseph Juran, Philip Crosby and Armand Feigenbaum are covered in Chapter 4. The attributes of service quality are reliability, responsiveness, caring for the customer, and the physical appearance of the place at which services are performed, which is called the “Servicescape”. For example, a management “walk-through audit” can pin point worn carpets and bad wall paint, all of which affects the quality perception. Quality practices in the 21st Century have come a long way, dominated by comprehensive programs like Six Sigma and ISO. The name Six Sigma implies a quality standard covered by six standard deviations under a normal curve, or about four errors in one million opportunities, which most likely nobody has ever achieved. The Six Sigma process is defined as designing, measuring, analyzing, improving, and controlling, or DMAIC. In other words, it’s the execution of this process that leads to quality. Workers so trained in this process are the advocates of product and service quality in major corporations worldwide. Their job titles are Black Belt or Master Black Belt and they are certified for this work. The measuring portion of Six Sigma includes standard techniques like:

1. Flow charts to visually connect inputs to process, and process to outputs, and then to customers. Flow charts are graphics to explain and improve a process to a wide audience.
2. Run charts to show quality measurements taken at regular intervals over time, like meeting the service response time in a busy restaurant.



Brain power

By 2020, wind could provide one-tenth of our planet's electricity needs. Already today, SKF's innovative know-how is crucial to running a large proportion of the world's wind turbines.

Up to 25 % of the generating costs relate to maintenance. These can be reduced dramatically thanks to our systems for on-line condition monitoring and automatic lubrication. We help make it more economical to create cleaner, cheaper energy out of thin air.

By sharing our experience, expertise, and creativity, industries can boost performance beyond expectations. Therefore we need the best employees who can meet this challenge!

The Power of Knowledge Engineering

Plug into The Power of Knowledge Engineering.
Visit us at www.skf.com/knowledge

SKF

3. Pareto charts to reveal common 80:20 relationships, like many quality variations that are linked to only a few potential causes. Pareto was an Italian economist who discovered, at the time of measurement, that roughly 20 of Italy's population accounts for 80 percent of the country's income. The approximate 80:20 ratio can be found by many other natural situations.
4. Check sheets, which are used in small volume data collection. An example may be counting how many times pieces of mail are undeliverable due to a wrong Zip Code in a mass mailing.
5. Cause-and-Effect diagrams, which are visual tools for identifying possible problems in a process. They are also called Fishbone Diagrams, because the diagram looks like that. See the illustration in Chapter 8, Cause & Effect.
6. Opportunity flow diagrams that separate value-adding activities from those that don't add value, and thereby identify opportunities for waste reduction. For example, a retail inventory larger than a certain amount, does not add value, but gift wrapping may.
7. Control charts measure process variations over time. They have a statistically computed upper and lower control limit into which range all observations must in order to be considered good quality. An example may be call-center problem solving time between 2 and 8 minutes.
8. Poka Yoki is a Japanese expression that means fool proofing which expression has entered into the business lexicon. It is a simple quality concept that makes mistakes nearly impossible to happen. Two electrical connections that should never be connected are designed to not fit; or the reason you are unlikely to accidentally put diesel fuel into your car's gas tank, is that the diesel nozzle is too large for the tank opening.

Six Sigma techniques are applicable to both the Service sector, like a hospital operations, and the manufacturing sector, as in the making of Motorola cell phones.

ISO 9000 on the other hand is an international quality standard that measures the process rather than the product. The implication is that, if a company has an audited quality process using lots of measurements and data, then the product is probably all right too. The presumption is that an enterprise so certified, says what it does and does what it says. ISO certifications serve the primary purpose of building trust among global trading partners. The program is administered by the Organization for International Standards. The word "*iso*" means *equal*, as in an isosceles equal sided triangle, implying an equal global trading platform. ISO 9000 series applies all kinds of business, while the ISO 14000 series address environmental issues such as resource reduction, recycling and others.

Sustainability

Sustainability is a popular subject in the current business literature. Before one can attempt to measure it, one must have a clear idea what it is. To overcome this hurdle, the following is a brief history of sustainability:

1. 1972, Club of Rome publishes *The Limits of Growth*. The Club is a global think tank, headquartered in Winterthur, Switzerland. The report addresses worldwide resource constraints linked to growth.
2. 1987, the United Nations publishes *Our Common Future*, which is also known as “Bruntland Report.” It defines sustainability, paraphrased here, as *meeting the needs of our current generation, but not at the expense of the next generation*.
3. 1992, the United Nations sponsored the Earth Summit conference in Rio de Janeiro, and it resulted in “Agenda 21,” which is a blue print for sustainable development. The Kyoto Agreement (1997) followed, which addressed carbon emission among global warming concerns, and instituted carbon pollution trading for companies to meet national limits.

For the purpose of our discussion here, we accept the Bruntland definition of sustainability. Table 3.1 illustrated different measurement approaches to achieve a certifiable level of sustainability in different service industries: Organizational motivation for doing this is to show corporate citizenship, to promote good will, to keep and win customers and yes, to save money and as a result make more profit.

SECTOR/CATEGORY*	SECTOR DEFINITION	CONCEPTS OF SUSTAINABILTY	Examples
22/Utilities	Electric power, water, natural gas, steam and sewage removal	Resource reduction and teaching conservation	Con Edison of NY
42/Wholesale Trade	Merchandize without product transformation, mining, agriculture and information-publishing	None	Kole Import, Consortium
44–45/Retail Trade	Merchandizing, no product transformation, final step in consumption, distribution, stores and non-store sales	Eco-labeling, index development, getting greener	Wal-Mart, Amazon.com
48–49/Transportation, Warehousing	Passenger service, cargo and support thereof.	Green warehouses ,ROI, substitute jet fuel, compliance, stewardship	Continental/United Air
51/Information	Production and distribution of information products, includes cultural aspects like music.	Teaching and happiness of people, technology for resource reduction and financial stability	Harvard University, MIT, IBM, Chicago Orchestra
52/Finance, Insurance	Transactions involving financial instruments	Financial, environmental, social	The Hartford
53/Real Estate	Residential and commercial	Financial and environmental, teaching	Siemens Building Technology, HUD

SECTOR/CATEGORY*	SECTOR DEFINITION	CONCEPTS OF SUSTAINABILITY	Examples
54/Professional, Scientific	Performing activities for others involving expertise in accounting, legal services and veterinary services.	Communication strategy, bench-marking, unique to each enterprise, Brundtland definition	Deloitte, LLNL, IEEE
61/Educational	Instruction and training from elementary school of graduate school	Environment, social and justice plus Brundtland, financial	University of California, City of New York
62/Health	Health service production for individuals	Triple bottom lines, LEEDS buildings, farmers markets, consumption balanced with replenishment without interruptions.	Cleveland Clinic, Kaiser Permanente
71/Arts, Entertainment	Production, promotion and participation in cultural events	Purely financial for opera company, to resource reduction, society, for TW	Metropolitan Opera, Time Warner
72/Accommodation, Food	Hotel lodging and food for immediate consumption	LEED and Green Seal, environment and economics conflict, managerial ethics, business sustainability.	Hilton Hotel, Bretton Woods Eat 'N' Park Hospitality Group
92/Public Administration	Federal, State and local, legislative, judicial services	Resource based, Brundtland definition, financial	EPA, Vermont

Source: US Census Bureau, 2007- North American Industry Classification System (NAICS)


Table 3.1: Summary of Selected US Service Sectors' Approach to Sustainability.

> Apply now

REDEFINE YOUR FUTURE
AXA GLOBAL GRADUATE PROGRAM 2015

redefining / standards 

agence.cdg. © Photonistop

 [Click on the ad to read more](#)

Concurrent with the public sustainability debate, come proposed accounting changes for improved transparency. The new accounting concept is called the Triple Bottom Line; defined as profit, people and planet. This subject is too new for there to be agreement as to its make-up; but the Triple Bottom Line Sustainability measurement Table 3.2 is an attempt to come to grips with the issue.

Domain	Purpose	Benchmark in Year₀ Actual Value	Measurement 1	Measurement 2
Profit	Solvency	Current ratio current (assets/liabilities)	%change from Last year,+	%change From Year ₀
	Profit	Net profit margin Net (income/operating revenue)	%change from Last year, +	%change From Year ₀
	Leverage	Debt ratio Total debt/total assets	%change from Last year, -	%change From Year ₀
	Market value	PE ratio Price per share/earnings	%change from Last year, +	%change From Year ₀
	Growth	$\Delta S(\text{sales}) = S_s - S_0$	%change from Last year, +	%change From Year ₀
People	wages	Lowest annual wage as a percent Of the official poverty level	%change from Last year, +	%change From Year ₀
	Health	Percent of full and part-time Employees covered by insurance	%change from Last year, +	%change From Year ₀
	Learning	Corporate training expense, incl. Tuition refund, as a % of revenue	%change from Last year, +	%change From Year ₀
	Equity	Highest annual employee personal total income, as a % of lowest	%change from Last year, -	%change From Year ₀
	Society	Financial support for non-PAC Community projects, % of net profit	%change from Last year, +	%change From Year ₀
Planet	CO ₂	Tons emitted in operations	%change from Last year, -	%change From Year ₀
	H ₂ O	Gal/year water used in operations	%change from Last year +	%change From Year ₀
	H ₂ O	Gal/year water reclaimed, recycled	%change from Last year, +	%change From Year ₀
	Energy	Σ (kwh, fleet gasoline, diesel, heating Oil, coal etc.) used, in BTUs	%change from Last year, -	%change From Year ₀
	Remediation, Dumpsite clean-up, wetland restoration	Investments in alternative energy count for carbon neutrality, estimate BTU value, as % of current use, land-use	%change from Last year, +	%change From Year ₀

Wolf (2003)

Table 3.2 – Proposed Sustainability Index Matrix

Work Itself

Work has been measured since the beginning of time. In Physics, “Work” equals (Force) X (Distance) in one direction. For example, moving one pound one foot in the vertical direction is a unit called a “ft/lbs.” Frederick Taylor around 1911 started a movement called *Scientific Management*; it involved matching the tasks at hand with the most suitable workers and then breaking the task into smaller steps in order to produce maximum output. Substantial productivity (output/input) gains were presumed to be shared with the workers who produced them, but that did not always work out that way. Taylor was followed by Frank and Lillian Gilbreth, who studied time and motion on the factory assembly lines with stopwatches and movie cameras at about the same time. In the 21st century motion studies are still performed with video observations and statistical sampling methods, because the tiniest improvement in efficiency multiplied millions of times, can make a huge difference in output and then result in a competitive advantage. Time and motion studies result in what is called Standard Time, where

$$\text{Standard Time} = (\text{Observed Time}) * (\text{Rating Factor}) *(1 - \text{Allowance})$$

To clarify these terms a bit, (a) observed time is the measured time to complete a task, (b) rating factor means that if a person is working at for example a 90% rate he is being slower than normal, or 100% meaning normal, or 110% faster than normal, and (c) allowances deal with fatigue factors, process delays, scheduled coffee breaks and such. An example of an organization having studied and optimized motion measurements is United Parcel Service, for example they have a no left turn rule for trucks on the notion that this saves valuable delivery time. A table of measurements in different industries is the following:

Measuring Problem	Approach	Measure
Hospital Waiting Room	Segment patients by health issue	Staff skills, office layout, time interval
Ideal Office Location	Minimize travel distances and costs between service source and client	Distance, time, coordinate point on a map
Airline No-shows	Balance the probability of now-shows against probability of overbooking	A technique called Yield Management
Comparisons to a standard	benchmarking	5-point scale ranging from strong to weak
Service Encounter	Service provider meets customer, Service Blueprinting	Process gaps, likelihood of errors occurring at an activity, bottlenecks, resource shortage, waiting time
Waiting Line	Queuing Theory provides simple formulae characterizing the queue	Arrival rate λ and service rate μ
Social Media	To have a clear understanding of the Company and its client interaction in all circumstances	Chatter and traffic volume, subscriber attitude, pass-on instances, number of buys and decision process leading to it
Project Control	Microsoft PROJECT and similar	Cost, time, constraints, resource availability

Table 3.3 Measuring Services

Case 3: Measuring Social Media

Picture yourself working for a large family owned restaurant with several establishments all in one state or province and each serving a local community, rather than having transient clients. The owner, your boss, not only graduated from the Vermont Culinary Institute, but also has a degree in business management and is a savvy businessperson. The restaurants' appeal is the freshness of its locally procured food that farmers deliver daily. Fresh milk is delivered in recyclable containers. The same daily delivery is true for fruit and vegetables. Herbs are grown on the restaurants' roof tops, leafy greens are hydroponically grown etc. In other words, the place is "sustainable," and that appeals to its patrons and also differentiates this restaurant from the competition.

Your boss asks you about social media, which you understand to mean an ongoing web-and mobile technology based dialogue, with customers creating the content. His question for you is whether social media could increase traffic into the restaurant. Since such a project would cost real money, your boss also wants a measurement of success. He speaks of ROI, which you know stands for Return on Investment and is computed as:

$$\text{ROI} = \frac{(\text{Gains from investments}) - (\text{Cost of such investments})}{(\text{Cost of such investment})}$$

His last words before leaving were "stop by my office tomorrow afternoon and let me know what your approach would be!"



LIGS University
based in Hawaii, USA

is currently enrolling in the
Interactive Online **BBA, MBA, MSc,**
DBA and PhD programs:

- ▶ enroll **by October 31st, 2014** and
- ▶ **save up to 11%** on the tuition!
- ▶ pay in 10 installments / 2 years
- ▶ Interactive **Online** education
- ▶ visit www.ligsuniversity.com to find out more!

Note: LIGS University is not accredited by any nationally recognized accrediting agency listed by the US Secretary of Education. More info [here](#).



Your head is spinning with ideas relative to search engine optimization (SEO), segmentation of diners by age, their income and education if possible, the cost of monitoring this project, and especially computing an ROI based on only ideas rather than hard numbers.

Assuming that this restaurant chain has about U.S. \$6 million revenue per year, and this is a 1-year project for you. You may attempt the following exercise:

1. Elaborate on the additional cost and benefit from social media as defined:
 - a) List the specific benefits from current clients, expected new clients, etc.
 - b) List the specific costs of content, campaign, etc.

2. Make reasonable dollar assumptions of
 - a) Value from revenue gained, better margin, cost avoidance, etc.
 - b) Sum of costs Σ (all costs)

3. Compute a hypothetical Social Media ROI

Chapter 3 – Questions

1. Can you describe the Service you perform on your current job? Who is your client, what do you do for that client, what does the client expect; and then can you define “your” service gap?
2. In order to narrow “your service gap”, what would you specifically have to do and how much would that cost? Does this have an ROI?
3. Can you make a case and propose a Service improvement program for your company that both makes clients more content and is profitable in the long run, and can you make that point with real numbers to your boss?

4 Workplace Measurements in the Manufacturing Sector

The most efficient way to produce anything is to bring together under one management as many as possible of the activities needed to turn out the product.

– Peter Drucker

In the chapter 3 Service Sector discussion, we focused mostly on intangibles; but in the Manufacturing Sector we deal predominantly with things that are countable and defined as tangible. The distinction between the two are not always that clear, as mentioned earlier, because a product like a refrigerator (tangible) can come with a maintenance agreement to make it more attractive to the buyer, which agreement is pure service and thus intangible. To put it simply: the measurement objectives in manufacturing are intended to deliver “fast, cheap and good,” whatever the output is. The term “good” here refers to product quality about which definition there is no absolute agreement.

Manufacturing Quality, what is it?

The early works of Walter Shewardt, Edward Deming, Joseph Juran, Philip Corsby and Armand Feigenbaum all pondered the question of what quality really means, but they all had a product in mind in tackling the issue.

1. Walter Shewardt in the early 1900s measured product quality attributes by conventional statistics, admitting that some variables, like tolerances, could be controlled while others could not.
2. W. Edward Deming in the 1950s was no doubt one of the most influential leaders in quality. He focused his measurement efforts on the process of product creation, and above all on continuous improvement, for which the Japanese word *kaizan* is now part of the global business lingo.
3. Joseph M. Juran in roughly the same period of time as Deming, focused on measuring output with respect to fitness of use and product design. If the product works as intended then this is quality. If a radio can be turned on and play music, that is quality
4. Philip Crosby in the mid-20th Century tried to achieve zero-defect in products. He wrote, *Quality is Free*, in which book he proves that returns, repairs, warranty claims, and loss of reputation, are more costly than doing work correctly from the start.
5. Armand Feigenbaum, who is also credited with the TQM (Total Quality Management) movement, studied the manufacturability of product through design, and was concerned with the cost of quality itself.

After the mid 1970s, global leadership in the quality movement was taken over by Japanese business leaders, mainly because quality was seen as a competitive advantage in everything.

In order to achieve “fast and cheap”, one must pay attention to the flow, supply chains, projects, forecasting and financial parameters that govern the system.

Flow

One way to achieve fast, cheap quality is to pay attention to flow, that is, how things move through a process from raw material to finished product. The reader may have noticed that pre 1950s factory buildings tend to have many stories, while contemporary ones are large and flat. The cost of moving material up and down has something to do with that.

Just-In-Time, or JIT, is currently the best flow management approach for mass production. It meets the fast, cheap, quality criterion. Rather than *pushing* product out of the factory, JIT *pulls*. If there is no demand, there is no production and hence no inventory accumulation. Inventory for purposes other than buffering or hedging is considered a waste. JIT combines the experience from Henry Ford’s assembly lines and U.S. supermarkets, into a new manufacturing philosophy attributed to Toyota Motor Company. As the name implies, parts arrive just in time as needed. In-process inventory is constrained by *kanbans*, (a measure) which can take the form of painted squares on the factory floor, or buckets that are not allowed to overflow with product. Size and location of *kanbans* are computed to optimize smooth flow. JIT is a cultural phenomenon that relies on worker teams to achieve quality and competitive advantage. Its measurement focus is on waste reduction, smooth flow, low inventory among others.

TURN TO THE EXPERTS FOR SUBSCRIPTION CONSULTANCY

Subscribe is one of the leading companies in Europe when it comes to innovation and business development within subscription businesses.

We innovate new subscription business models or improve existing ones. We do business reviews of existing subscription businesses and we develop acquisition and retention strategies.

Learn more at [linkedin.com/company/subscribe](https://www.linkedin.com/company/subscribe) or contact
Managing Director Morten Suhr Hansen at mha@subscribe.dk

SUBSCRIBE - to the future



Project

Broadly speaking, a project is the sum of related work steps, which, when completed more or less in sequence, produces a major output such as a building. A project is unique and also one-time event. Projects require measurements for planning and controlling resources such as workers, equipment and material. To measure progress towards the goal of completion, managers use Gantt charts, flow charts, a bit of statistics and probability theory, etc. for estimating the critical path of events through the project. The critical path method (CPM) computes the longest path through a network to complete the project, as the longest path defines the project duration, the remaining activities have slack. For managing a large project like assembling a customized oil-drilling platform, software packages like *Microsoft Project* contain most of the essential measurement and decision-making components. These metrics pertain to cost, timing and scheduling resource availability among others.

Financial Operations

Every-day corporate life is wrapped up in measuring money. Over the decades, standard measurements have evolved which pretty much define the economic game. Take metrics like variable cost, fixed cost, sunk cost, and opportunity costs for example. As the names imply, variable costs are proportional to volume of production, while fixed costs are constant at a given level of production and may represent rent, interest payments etc. Sunk costs represent past investments that most likely have no recovery value today, while opportunity costs means a foregone benefit of choices not taken. Common financial ratios have already been introduced in Table 3.2.

A large number financial measurements deal with the time value of money, the idea that a dollar today is worth more than a dollar next year at this time, modified by an interest rate. With this basic idea one can compute the net present value of a future stream of combined expenses and income, or the value of an annuity, or breakeven point of an investment. Another group of measurements are financial indices that are designed to mimic the market behavior of a given segment, or an index like “personal ability to pay” which infers meaning from data like age, gender, years in residence, marital status, number of years in current job. See Chapter 8 for an introduction to indexes.

Concept	Description
Business Process Re-engineering (BPR)	Work processes do become stale over time. This concept is to design a radical new approach to get the same job done differently and achieve dramatic productivity gains.
Surveys	Capture corporate performance from the client perspective statistically, can be done via email, face-to-face, or mail, or telephone.
Five Forces	A model that tries to quantify the power of (1) suppliers, (2) customers, (3) new competitors, (4) present rivals, (5) and product substitution
Balanced Score Card	A model on how one meets stakeholder needs, such as clients, employees, investors, the community etc.
Process Dashboard	A centrally displayed collection of company-wide performance measures derived from internal and external sources.

Table 4.1 Workplace Measurement Concepts

Forecasting

One can accurately predict the mean time-to-failure (MTF) of a light bulb based on how it is designed, used and built. Plus, one may even extend the availability of light with built-in redundancy of light bulbs. Many of us casually accept the rule that the past is likely to repeat itself by saying: we will probably sell the same products at the same volume in the next three months as we did in the last three months. Forecasting is a measurement, because based on forecasts we decide to build factories, roads, hire people, buy materials, etc. Forecast methods can be qualitative, that is leaning towards judgment. Or they can be quantitative with an emphasis on mathematical statistics. The best forecasts combine mathematical rigor with sound judgment and experience.

Qualitative Forecasting Methods:

Delphi Method: Ask a panel of experts to forecast a future event about which there is not much of a history, like predicting the probability that a new technology such as 3-D Printing will be taking hold. Then tabulate the panel's responses, only leading to a new set of questions. Repeat this process at least three times, and come to consensus about 3-D Printing going commercial. The method is named after The Oracle of Delphi.

Event Correlation: This method presumes that a future event is related to a past event, for example, the price of gasoline and subsequent mass-transit ridership.

Historical Analogy: Presumes that growth of a new product will mimic a similar product in the past for which data exists. Example, the sales pattern for a new Italian cookbook, will display similar sales pattern as an earlier Italian cookbook did in the same market.

Quantitative Forecasting Methods:

Moving Average: This method applies to non-seasonal trends. It assumes that next months' sales will be the average of the last n-months sales. The value for "n" can be weighted with values between >0 and ≤ 1 if recent observations are considered more important.

Exponential Smoothing: This methodology takes the error of the last forecast (actual value – forecasted value) and then makes an appropriate adjustment to the next forecast based on that error. Errors themselves have a normal distribution and follow the bell-shaped curve.

Regression: Regression defines the relationship between 2 or more correlated variables, like beer sales and football games. It takes past observations and then fits a line through observed values in x-y coordinates. The result is a line in the form of $y = a + bx$, where "b" is the slope of the line and "a" the y-intercept. The computations are readily embedded in most spreadsheet programs.

Supply Chains, Distribution, Warehousing.

A supply chain is a network of firms voluntarily linked via technology, information, physical resources and people, who are intent on efficiently moving product components from their origin to the end customers as a finished product. “United we stand, divided we fall”; “one for all and all for one”, are phrases that come to mind in the ideal world. Enabled by e-commerce technologies such as enterprise resource software and the Internet, supply chains are truly systems with information feedback and constraints. By definition, systems react to their surroundings’ information signals, such as customer preference changes or supply disruptions due to earthquakes and labor unrest. Historically, Henry Ford was probably the first modern supply chain manager as he owned the process from iron ore mining to car dealerships. Today, such a concentration of power is not possible for a variety of reasons, money being only one. Currently, supply chains span the globe and are a huge business focused on collaboration, learning, and efficiencies to benefit the end consumer. Obvious measurement questions are: have deliveries been made on-time, are the orders complete, is the product and service quality good, is the customer happy and re-ordering, are the invoices correct? Inventory management is an especially important focus of supply chains and some metrics are these:

1. Inventory management in the whole chain from raw material to end product, rather than just one single company. Measure the money value tied up over time.
2. Inventory at each stage in the system from raw material to finished product. Given that the last stage contains the highest value, it may be prudent to hold inventory in earlier stages, a process called “postponement.” To have value accumulate at the beginning stage may be prudent with respect to cost, but not so prudent with respect to customer response time. Product value at each stage, and time to reach customers, are needed measurements.
3. Inventory turnover (cost of goods sold) / (average aggregate inventory value) is a measure of efficiency. Cost of goods sold is the company’s annual cost to produce goods and services, but does not include selling and administrative costs. Values vary by industry; a retail stores’ number can be as high, or fast, as 100 and for a manufacturing entity as low as 6.
4. Weeks of supply at hand = (average aggregate inventory value) / (cost of goods sold)⁽⁵²⁾, a useful measure when inventory is considered an investment. Under JIT, for example, an automobile assembly plant may open Monday morning with two hours of inventory at hand, which is intentionally super “lean”.
5. Supply chain velocity measures the time from raw material to end product in customers’ hand. Like so many other aspects of life on this planet, increasing speed is considered good. But a good wine still takes its own time.

The final chapter on supply chain measurements is far from having been written, in fact, it is a wide-open research field.

Score	Objective	Metric	Target	Initiative
Financial	Pay bills and get paid	Financial ratios in support of chain solvency	20% chain-wide improvement	Monthly review against annual goals
Customers satisfaction, responsiveness, order fulfillment	Loyalty, quality	Repeat sales	>90 percent	Quarterly review
Process bottlenecks	Smooth flow	Constraints, speed, capacity increases	Velocity increase	daily
Learning Individual organizational	High % of revenue from products fewer than 5 years old, innovation	percent	>15	Quarterly review
New products due to customer collaboration	Innovation, collaborations, supply chain trust	R&D, cost, revenue	Long term	annually

Table 4.2 Supply Chain Score Card

“I studied English for 16 years but...
...I finally learned to speak it in just six lessons”
Jane, Chinese architect

ENGLISH OUT THERE

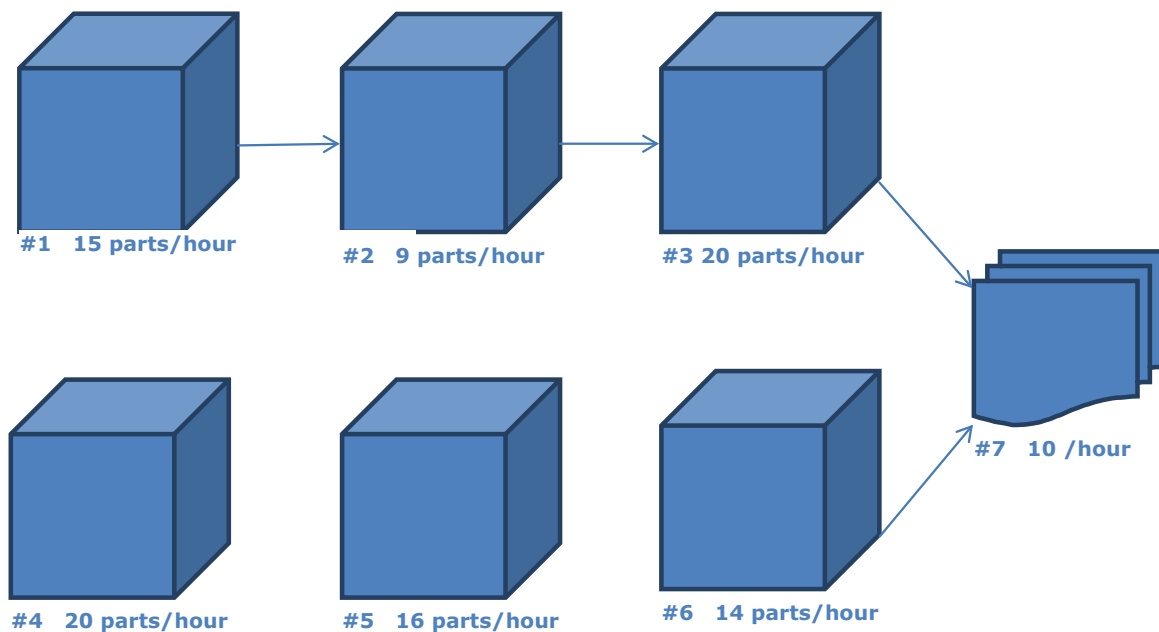
Click to hear me talking before and after my unique course download



Case 4: Linking Capacity Measurement to Management Decision

Picture yourself as the owner/manager of a small manufacturing and assembly operation in a mid-sized town. You bought this operation from your parents and you employ more than fifty fellow townspeople. Your company manufactures for the outdoor recreation market producing electronic gadgets such as pedometers, compasses, temperature gauges, GPS add-ons etc. Your firm is marginally solvent, that is you meet nearly all of your financial obligations most of the time, but your own modest paycheck has to be delayed now and then.

Prospects for the future, however, are not all that bad. In fact, you may not be able to meet demand for a certain product because of capacity constraints. You need to increase capacity, but the question is where? The production line in question is made up of seven workstations as follows: work stations 1–3 assemble electronic components, and 4–6 pertain to making the housing of the component. The final operation is work station 7 which puts the electronics into housing, connects wires, and tests the product. The capacity of each work station is stated in the picture below.

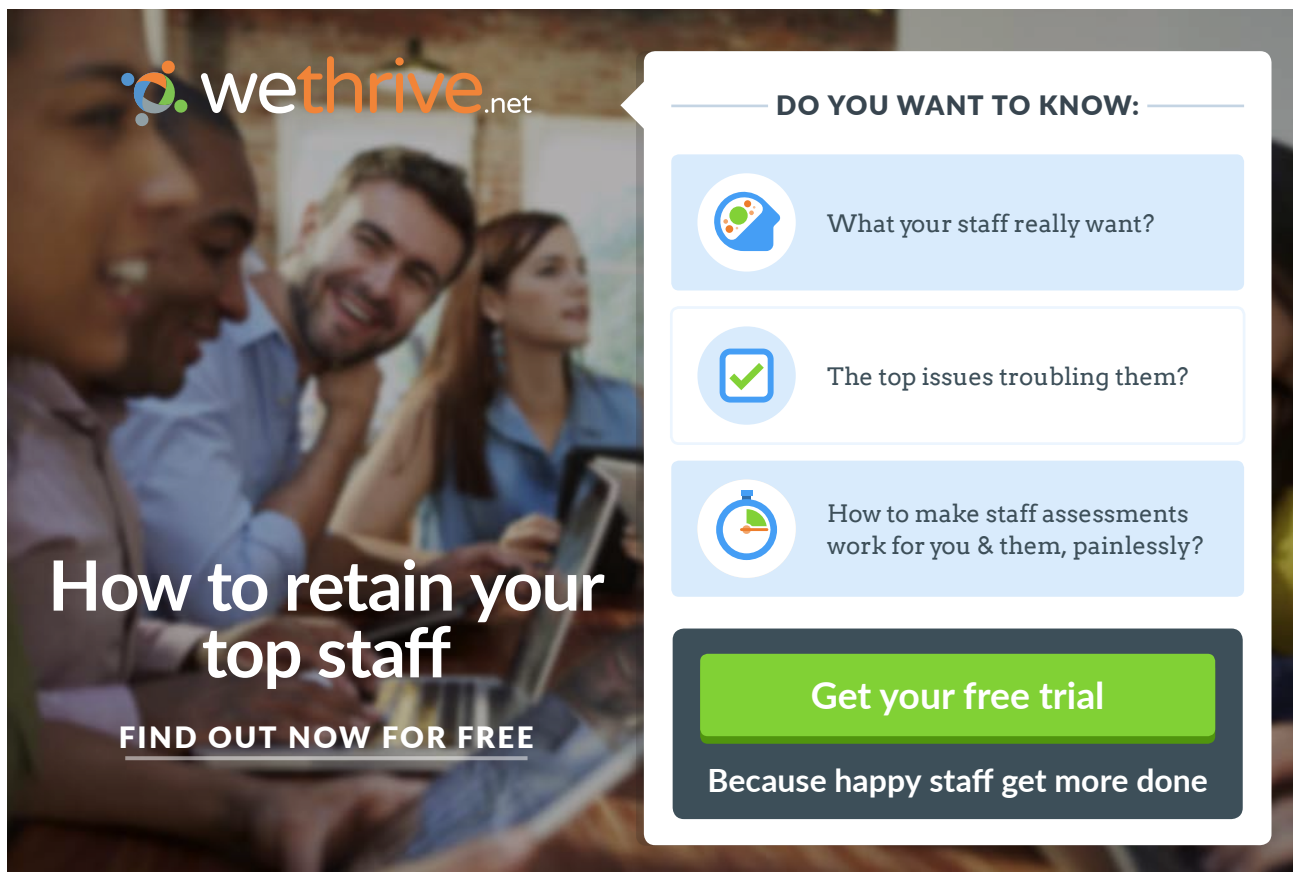


1. How many units is this layout capable to produce?
2. If you had to make an investment to increase capacity, where would you invest?

(The answer lies in #2. It is the slowest work station and by definition the constraint. The whole system can produce more than its slowest part. #2 is also the only point in the system to look for capacity improvement, for the same reason. Investing in work station #6 for example, would do nothing to the total capacity.)

Chapter 4 Questions

1. Take a fresh look at new governmental regulation imposed on your company. These may relate to solvency if your company is a financial institution or to the environment if you manufacture something, or wages and benefits. What new measurements are applied and do they really support the need?
2. How exactly does your employer measure production or services? When was the last time these metrics were changed or reviewed?
3. What is your personal product, brand or service? If it is parenthood, how do you measure that?



wethrive.net

How to retain your top staff
FIND OUT NOW FOR FREE

DO YOU WANT TO KNOW:

- What your staff really want?
- The top issues troubling them?
- How to make staff assessments work for you & them, painlessly?

Get your free trial
Because happy staff get more done



5 Measurements in the Public Sector

One of the great mistakes is to judge policies and programs by their intention, and not their results.

Milton Friedman

The term “public sector” includes government at all levels from municipal, to county, to state and federal agencies. How these organizations are measured matters a great deal as it affects everything from social welfare to the nations’ economic growth. But the regulatory and redistributive powers of governments are often driven by political considerations and the policies of the month’s fashion, rather than evidence. Hence the answer to the questions of what constitutes the best measurement and best outcome is constantly being redefined. Following a brief introduction into the most massive data collection effort called the US Census, nine broad areas of governmental measurement activities are presented. Our discussion is limited to commercial considerations; clearly leaving out national laboratories, major US agencies like EPA and State as well as intelligence, law enforcement and the military.

The first US Census took place in 1790 when Thomas Jefferson was Secretary of State. The US Constitution (Article 1, Section 2) mandates that there be one every ten years. Local marshals used to hire deputies to get the information for their districts. Courts did this work in the early days as well. By 1810 information on fisheries was added, and by 1840 issues like crime, religion, taxation and other social issues were addressed by the US Census. It was not until 1902 that a separate Bureau of the Census was established under Theodore Roosevelt. The immediate consequence of the population count was the apportionment of electoral districts for the House of Representatives, and ultimately electors in the Electoral College. That can get touchy as the Census counts people in places, citizens or not. Another statistical agency, the BLS (Bureau of Labor Statistics) measures unemployment with the following definition:

Employed: people with jobs or working for compensation

Unemployed: not having a job, looking for work and being available to work

Neither a) nor b): not in the labor force, not counted as unemployed

The US Government’s focus is on measuring nine broad areas of service as described below. This answers the question why measurements are taken. Within each “why”, we can search for the “how” in order to understand the applicable units of measurement.

Public Finance/Economics

Included in this rubric are all government revenues derived from taxes and fees, all expenses to operate government, and all debt for investments, grants, and aid, general fund balances, etc.

Defense, public safety, and infrastructure, address the collective good. Health, education and social benefits address the individual good.

Revenue per person to indicates size of government and tax burden and tax capacity. A governments' fiscal position can be explained by fund balance and liquidity, fiscal flexibility by income sources, like aid from the federal government to the State government.

International debt comparisons are subject to currency fluctuations governed by a measurement called purchase power parity. The PPP is defined as the cost of a basket of goods and services in country A, and then estimated for country (B) at the current exchange rate.

Strategic foresight and leadership

Included in this rubric are concerns for fiscal sustainability and strategic resource management. Measurements related to balanced budgets may be appropriate here.

The ability to be engaged in two simultaneous wars is a strategic policy that requires planning and funding, for which economic factors matter in addition to military ones.

Measurement related to macro- economic trends such as watching increases in government debt that may lead to lower growth and a downhill spiral after that. Debt as a percent of GDP is an accepted unit of measurement across nations worldwide; i.e. Japan is 200%, US about 100% and Estonia less than 20%.

The North American Industry Classification System (NAIC) replaced the Standard Industrial Classification (SIS) system in 1997. It is the basis for the publication of analyzing and publishing US statistical and economic data.

Government employment

Employment concerns focus on an ageing population working more years, educating the young for skillsets that industry needs, government and private workforce restructuring.

The proportion of government employment to total employment is an indicator how services are delivered, both in public and in private.

Measuring workers' age over time and skill level is relation to demand. The over 50 year old group is now 26% if the US workforce.

Compensation in public sector employment

Applies to teachers, some doctors and nurses, and non-uniformed government workers

What is being measured are changes over time, attractiveness of the professions

Measurements address impact of policies and quality, retirement packages, wage competitiveness with the private sector of the economy.



gaiteye
Challenge the way we run

**EXPERIENCE THE POWER OF
FULL ENGAGEMENT...**

**RUN FASTER.
RUN LONGER..
RUN EASIER...**

**READ MORE & PRE-ORDER TODAY
WWW.GAITEYE.COM**

Human Resource Management

Issues like performance in the professions, industrial relations, and delegation of work get analyzed with field data.

Motivation assessment measures are compared across departments by State and Federal governments.

Output measures relate to meritorious progress and productivity, college graduation rate by subject to forecast critical skills such as engineering, and apprenticeships for the trades.

Private sector Human Resources measurements are similar their public cousins, the difference is that private enterprise is profit motivated, while the public sector is service oriented.

Governmental transparency

Proactive disclosure by agencies, open budget process, freedom of information access

Look-see concerns are for legislative budget oversight, freedom of information filings

Measurements in this area are more qualitative than quantitative.

Public procurement

The actual volume of governmental purchases of products and services is very large; it is segmented by kind and impact, competition, transparency and fairness, among other categories.

One measurement objective is the beneficial impact of procurements on states, counties and cities and political subdivisions, often meaningful for elected officials in election years. Units are percent of GDP in total government purchases, and proportions by region.

Regulatory governance

This subject addresses the oversight framework, regulation and compliance enforcement

Agencies like FAA (aviation) and SEC (securities) are examples of regulation-driven public functions.

Actual measurements are both qualitative and quantitative in nature; for example, environmental impact assessments prior to enforcing a new regulation are efforts to come up with appropriate measurements. Poorly written regulations can lead to non-compliance and unintended consequences.

Consumer protection is concerned with measuring sales practices, intentional product misrepresentation and labelling. The units of measurement can be qualitative and quantitative.

The new measurement of GO

Here is a shining example of the need to change measurements every now and then. Starting with the 2nd quarter in 2014, the US Bureau of Economic Analysis will publish a new statistic on a quarterly basis. That measurement is called GO, which stands for Gross Output. GO measures the total sales volume at all stages of production, and it will be a much larger number than GDP. In comparison, GDP measures the total goods and services the US produces in a given year.

A good question why do people change measurements? The general answer is because the old measurements provide less meaningful information at the current point in time. In the GDP case it was easy to conclude that consumer spending to be the driving force in the US economy. It showed, for example, that consumer spending was 70% of the economy, followed by 20% government itself. This insight leads to the decision that when the driving force of retail sales is down, perhaps an economic stimulus is warranted? Under GO however, consumer spending may only amount to 40% of the economy and the conclusions we draw may be rather different. The differences between GDP and GO can be accounted for by counting investments, technology advancements, savings etc. GO is likely to be more sensitive to the business cycle.

It is highly unlikely that GO will replace GDP. By having both measures however, a more meaningful analysis of our economy is possible. This is an example in which the measurement itself can have such a profound influence on decisions.

Politics is never far removed from government spending. The constituents simultaneously demand more services and lower taxes, which is not sustainable and a contradiction. Elected representatives pride themselves for bringing free money to their districts and hope to get re-elected on that basis, which is also not sustainable. Measurements are often obscured to avoid accountability, such as promising municipal pension increases that are far into the future, a procedure that contributed to the city of Detroit becoming bankrupt under Chapter 9 of the US Code.

Many public services are delivered in a public-private partnership under contract, in which case the contract becomes the instrument that measures performance. One can think of the delivery of such public services as a private sector – public sector co-production.

Measuring the Public Sector Internationally

Each of the about 198 countries of the world capture data in various levels of reliability, differently and based on need and capability, but nearly all will capture GDP and per capita economic statistics. The best effort to consolidate these measurements into a coherent form is credited to the United Nations, and within that organization, the UN Development Programme. Since the 1990s it has produced an annual publication called the UN Development Index, which is loaded with measurements for all kinds of audiences.

The HDR (Human Development Report) has undergone three stages of growth, being a perfect example for this book's purpose, that is, to illustrate the ever growing need to change measurements. The first stage the Report was focused on utility measurements like GDP, per capita economics, life expectancy, literacy and others. In the second stage the focus shifted to social welfare which included a broader definition of what we now call "jobs", to measure instead "work". The latter included creative work, and work other than solely hours spent for compensation. In the third stage the HDR is bent on measuring progress in good governance, sustainability, equality and social fabric. Time has moved on, and we need new measurements!

The United Nations is the perfect mechanism for collecting data from its 198 member States. The Human Development Report includes an annual Human Development Index which compresses all these data into a single number allowing nations to be ranked among each other by a multitude of variables.



This e-book
is made with
SetaPDF

SETASIGN

PDF components for PHP developers

www.setasign.com



Case 5: Is our Good Olde Town going Belly-up?

Imagine yourself to be in Jane Schröder's position, who is the appointed city manager of Schnappsville, a 236,000 soul town in the northern US Midwest. The town is just large enough to share all the big city problems, and yet small enough for her to deal with problems directly. All town departments request her daily attention such as police, teacher unions, firemen, medical emergency, homeless shelters and food banks, subsidized housing, endless public meetings, requests to fund projects for historic preservation and remodeling an old factory building into an arts center and shopping mall, road maintenance and snow removal, plus opportunities to fund projects with State and Federal grant programs, to name a few. Given so many demands, you are concerned about solvency!

The town books are currently balanced and audited and she has all the data on past and present payments and sources of income. She also reads the Wall Street Journal and knows that towns can become insolvent. Big cities like Detroit, San Diego, San Francisco and smaller ones like Schnappsville in Alabama, Rhode Island already experienced insolvency very publically.

On the assumption that municipal insolvency does not happen overnight, what information should she ask for now to prevent insolvency later? In particular what should be her new metrics? Not reflected in the current budget is a potential contract with the police two years from now, the firemen are asking for wage parity with the police and the teachers seek to reach a national salary average; and by the way, the town postponed paying pension contributions this fiscal year in order to pay for repairs due to a local flood.

The big question is this: Being city manager, what measurement questions should you ask for to address the municipal solvency concern?

Answer: One way to put your arms around the problem is to focus on three specific domains:

A Fiscal Position, addressing fund balance and liquidity

1. Fund balance as a percent of general fund revenue, last few years
2. Quick ratio, (cash + investments) / (operating loans and liabilities)
3. Unfunded pension liability as a percent of general fund balances, last few years

B Fiscal Flexibility, addressing debt service and state aid

4. State aid as a percent of municipal budget, last few FYs
5. Growth in education budget
6. Debt service as a percent of revenues, last few years

C Tax Capacity, addressing per capita tax levies, exemptions by not-for-profits

7. Median family income, from 2010 Census, projected forward
8. Per capita tax levied
9. Commercial property tax rate current FY compared to other regional towns

Chapter 5 Question

1. Think of possible ways in which you personally benefit from governmental measurements, such as receiving a pension that is inflation indexed. Nearly all pensions are regulated by government and the indexing is done with the help of government mandate.
2. Governments know quite a bit about you from tax filings, from real estate purchases, from driver licenses and passport applications and border crossings etc. The question is where do you draw the line? How about a database of your phone calls, your Internet travels to measure national security risks?
3. Try to think of possible governmental measurement rules, under which your need for privacy is balanced with a government's need to know for it to function!



Discover the truth at www.deloitte.ca/careers

Deloitte.

© Deloitte & Touche LLP and affiliated entities.



Click on the ad to read more

6 Measuring Non-Profit Organizations

Never doubt that a small group of thoughtful, committed citizens can change the world, indeed, it's the only thing that ever will.

Margaret Mead

Let's start with defining what a not-for-profit organization (NPO) actually is.

NPOs are corporations in the legal sense. They have income, expenses, and balance sheets.

NPOs are systems, and as such are measurable.

NPOs exist to serve a narrow interest of social good, the responsibility of which if they did not exist would often fall on the government to provide, (think Red Cross and natural disasters). Because of that fact, government has given those entities an income tax exemption.

NPOs are exempt from paying income tax; they do however pay taxes related to employment, such as wage withholdings. NPOs are often listed as (501)(c), which designation refers to a section of the US Internal Revenue code.

US NPOs are usually incorporated under State law.

NPOs traditionally cling to their narrow cause; The NPO market is not nationally or globally organized into united force for change.

NGOs are non-governmental organizations that often function on the periphery of the body politic. Those accredited to the United Nations for example are there to influence policy. NGOs are NPOs, but NPOs are not necessarily NGOs.

NPOs cover the gamut of human misery and interests and may be strong in their narrow interests, but as a sector of the US economy, neither NGOs nor NPOs are well organized, or well represented in the halls of government for lobbying. The following table of well-known NPOs will illustrate the point of narrow focus.

Not-for-profit organizations paid 9.2% of all US wages and salaries in recent years.

Not-for-profit organization's business accounts for 5.5% of US GDP.

Organization	Purpose/Cause	Measurement/Outcome
Amnesty International	Expose, prevent global human rights abuse	#of cases, prisoner releases, conscience raising
Rotary International	Community service and good will	Club level projects, international projects
Carnegie Endowment for International Peace	Commentary on global issues, think tank	#policy discussions, programs
Teach America	Addresses problems in child education in USA	#Low income family children reached, teacher recruitment
American Red Cross	Emergency response preparedness	4 million blood donations, 70 disasters, 9000 people trained
Oxfam	Injustice, poverty prevention, internationally	Annual governance report, "Promises to keep"
IEEE	Global technology association in engineering	#conferences, papers, ethics code, technology standards

Table 6.1 Sample of large Not-for-Profit Organizations

Performance measures in the NPO market can be elusive. Management often makes decisions on anecdotal evidence (disappearance of persons) or on social science research (causes of homelessness), which research itself may not be current by the time it is published and which has perhaps only limited predictive value. Each organization therefore should take a close look at finding its own measurements and to ascertain that these measurements meet the following conditions:

Attribute	Guideline
Specific	Specific to the NPOs reason for being, <i>raison d'être</i> , unambiguous and unique
Observable	Based on data that is practical and can be collected, and is verifiable
Understandable	Donors, managers are responsible for lots of money that has to be explained
Timely	Define a slice of time, a quarter for example, and then make it comparable to other such time periods for trend analyses, share data with supporters, IRS (Internal Revenue Service)
Valid	Accurate data helps replicate findings

Table 6.2 NPO Organization Measurement Attributes

In some situations we have to find a proxy measure. If, for example, the mission is to reduce smoking marijuana by educating the public about its dangers, the program success measurements must show that such knowledge actually leads to reduced marijuana smoking. An example of how to avoid ambiguity is the following: Suppose you feel that improper handling of pesticides is dangerous. You then institute a labeling regime. A year later you collect data and find out that nobody suffered from chemical pesticide related injuries. Was your labeling program a success? At best one can't say for certain. See chapter 8 on "cause and effect".

Managers must get a handle on outcomes. Outcomes measure the big picture; outcomes are defined as the results of a particular program. If outcomes are of importance, then the beneficiaries should be counted. We look for indicators that drive the mission or cause. In a program of providing food and shelter for people in need, it is the outcome we want to capture; and that may be the number of meals served for a homeless shelter. A general rule evaluating NPO outcomes includes the following ideas:

1. Identify useful indicators for success in your mission and organization
2. Collect performance data from your operation and then benchmark against known NPO measures from similar or competing fields of endeavor
3. Based on benchmarks, allocate available resources and design, or redesign, the programs
4. Write an Impact Analysis of your work relative to efficiency, appeal to donors to be able to continue the good work, and justify it by outcome measures related to needs and benefits for the targeted audience.

It may be clear by now that no single measure fits all NPOs. Therefore, the reader is best served by considering a generalized measurement framework from which to develop correct outcome indicators.

Outcome Centered on	Indicators	Measures
Program	Participation Satisfaction	% of total population participating in program Level of satisfaction on a 5-point scale
Participants	Knowledge/learning/ attitude Behavior Condition and status	Skill, % score increase, % improvement as reported By participants, teachers. Incidence rate, relapse rate,% that achieved goal, % promoted to next level, improved relationship % graduating, % avoiding undesirables,
Community	Policy Public health Safety Economics Environment Social	Resources obtained or re-allocated Before and after statistics Incident rate comparisons with peers, best in the area Index of economic activity before and after program Specie survival rate in an eco-system Civility, dispute resolution, index of neighborhood quality
Organization	Financial Management Governance	Corporate financial ratios, donation growth/decline Program administration cost v actual program succession plan, board skill/talent for the mission, social connection, ethics code, reporting structure, departments, committees, % fund raising cost

Table 6.3 Not-for-Profit Organizational Outcome Measuring Framework

For all practical purposes, an existing nonprofit organization invariably has established its funding and service constituency. Take any example, and drill down into specifics of a human services not-for-profit organization, and you may find emphases on:

- Youth mentoring and tutoring
- Adult literacy
- Performing arts, crafts, and art in general
- Business assistance and support for commerce
- Advocacy

For each and every outcome measure, there is a documented data collection process in place that is approved by its Board, and is then monitored by management.

Measurements in Academia

The world of colleges and universities has changed drastically in the last quarter of a century, and surprisingly without the present academic leadership having caused much of this change. Of the many forces driving change are technology and the rapid industrialization in developing nations, the need for higher skilled workers even for entry level jobs, plus a trend away from educational elitism. There is no agreement on how to measure professors or students in this new environment, but there is a definite need for new measurements as a result of technological changes.

© 2013 Accenture. All rights reserved.

be > your degree

Bring your talent and passion to a global organization at the forefront of business, technology and innovation. Discover how great you can be.

Visit accenture.com/bookboon

Be greater than.
consulting | technology | outsourcing

accenture
High performance. Delivered.



Old World v New World.

- Professors

In the old world professors were passionate about teaching and distributing knowledge in their specialized field, and some of that still is true. As a result, professors were admired and ranked way above average in a social hierarchy, especially in Germany and Japan. To become one, an aspiring student would have to fit into the class and show promise in a field of study. On the notion that knowledge moves forward in small increments, professors had to engage in a “correspondence” with peers, that is they had to do research and publish. “Publish or perish” was the measurement.

In the new world, professors strive for job security in the form of tenure. Much of the actual teaching is done by assistants, adjuncts or part-timers. The tenured professor may meet with a small team of graduate students relative to their research, but the passion is for consulting and board appointments, leaving especially undergraduate teaching in the dust. How should one measure professorial performance?

- Students

In the old world, students sought to become literate first and employable second. They were encouraged by their proud parents who sought a better life for their children than the parents had in their own childhood. Liberal arts, law and medicine were common disciplines, all being noble endeavors characterized by service to the community. High living standards, long life expectancy, and inheritance tax regime have lead students to lowered expectations, believing that doing better than their parents is less likely now. Would a measure like “75 percent of our students are employed in their field of study” be a good measure for a four-year undergraduate study program? How relevant is an undergraduate degree in Psychology or Gender Studies in terms of employability and income generation?

In the new world, while law and medicine may still be “in”, liberal art is definitely “out”. On-Line teaching is improving to such an extent, that now class room teaching is considered inefficient in light of the masses of students seeking undergraduate and graduate degrees. There is also a convenience factor in online instructions in that students can simultaneously be students and hold jobs, and even maintain a decorum of family life, plus become life-time learners. While technology is racing along, any graduate or undergraduate degree now has a shelf life of about five years, give or take a bit. Is student success measured by who is first to make a high income?

- For profit education

On the surface, for-profit education delivers the same product as do non-profit institutions. However, universities are charging the same amount of tuition for their less costly online courses, as they do for the class room variety. Venture Capitalists are funding for-profit institutions and see an opportunity to make money here, only to cash out after five or more years. Their measurement is EPS (earning per share). Students wind up with a certificate hoping that it may have market value in job terms, which it often does not. Student loans in turn are guaranteed by the government, and ultimately the tax payers winds up with paying for none performing loans. It's noteworthy that the noble pursuit of knowledge, literacy and citizenship is not part of these considerations.

- MOOCs

MOOCs are *massive open online courses*, delivered through the Internet with infinite participation, a truly disruptive technology that started around 2008. Precursors of this technology were correspondence courses that started in the late 1800s and were sold via traveling salesmen. MOOCs now come in the form of individual courses and even full degree programs from such respectable institutions such as Georgia Tech offering a \$7,000.00 computer science degree, delivered entirely online via readings, video lectures, and multiple-choice quizzes. At this early stage one can suggest measurements such as

- Number of learners that last through certifications to measure program depth
- Job placements after completion to measure economic impact
- Peer to peer contacts that have resulted in new learning, or new projects, to measure incidental learning
- Number of languages represented to measure global penetration

On the negative side, MOOC courses may lead to a lower rated education comparable to training for tradesmen in the early 1900s. The elite in the meantime will still be enjoying small class room based instructions, high tuition and mentoring professors and job prospects for students that lead to leadership positions in the future.

Here in summary are some academic measurement trends to think about:

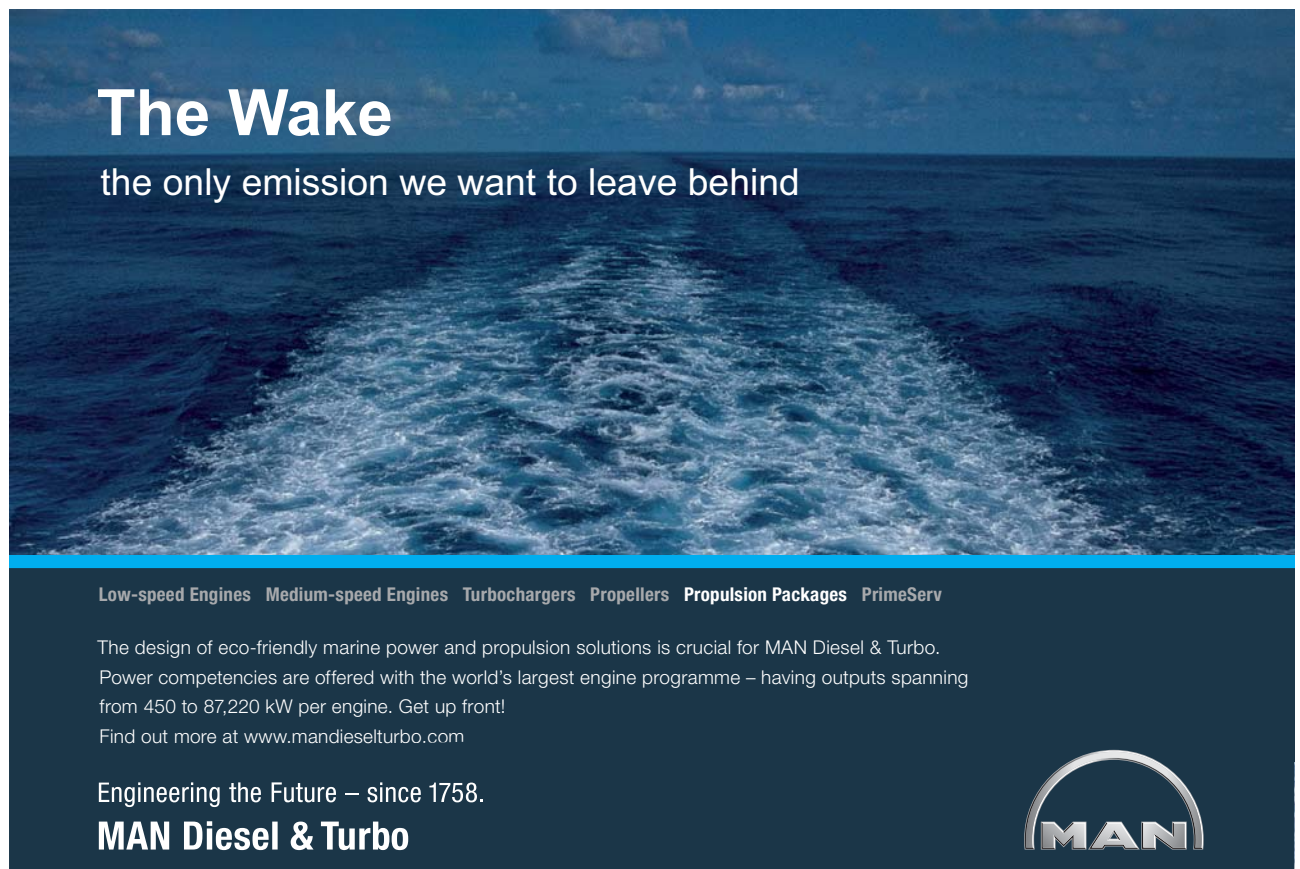
1. Publish **or** perish should be changed to *Publish and Perish* because many academic journals are becoming less relevant as a source of actionable information. As more professors are pressured into producing articles to earn tenure, more instances of fudged data become public, and many journals' credibility declines as a result.
2. Instances of "Teaching Excellence" defined as a devoted professor mentoring undergrads are harder to find in the future as the grand professors are off consulting and universities are relying of lower paid adjuncts to deliver classes.

3. Alignment of university degree programs to industry's skill needs may well improve employability of students, but may also produce micro specialists and social nerds.
4. Critical Thinking, defined as reasoned judgment, is the common argument in defense for liberal arts. It could be measured by:
 - Successful problem solving
 - Ability to prioritize work
 - Recognizing unstated assumptions
 - Clarity and interpretation of data
 - Logical relationships between propositions?

Much remains to be done in finding new measurements in academia worldwide!

Case 6: Is this Food Bank making Progress?

You have just been appointed Operations Chief of a 501(c)3 nonprofit community organization whose mission is to address local homelessness and hunger. The Board that hired you expects you to continue the good works and also operate more efficiently and effectively.




The Wake
the only emission we want to leave behind

Low-speed Engines Medium-speed Engines Turbochargers Propellers Propulsion Packages PrimeServ

The design of eco-friendly marine power and propulsion solutions is crucial for MAN Diesel & Turbo. Power competencies are offered with the world's largest engine programme – having outputs spanning from 450 to 87,220 kW per engine. Get up front!
Find out more at www.mandieselturbo.com

Engineering the Future – since 1758.
MAN Diesel & Turbo



Background

The community you serve was prosperous in the 1960s, but now is old, economically uncompetitive and littered with abandoned factory sites. This poor community is also wedged between two very well-off towns. The 501(c)3 provides temporary (30+days) and quasi permanent housing for individuals and families suffering from chronic conditions. That service is bundled with a 24/7 counseling services. The organization also runs a daily soup kitchen that serves 30,000 meals a day. All foods are donated by high end grocery chains giving away food items a few days prior to expiration date on the labels, plus restaurants.

The organization had \$1.9 million income and spent \$2.1 million for operations last year. Income came from fundraising in the neighboring two towns, grants, fees, rental income and interest. Program costs were 71% of the income, 17% were administrative costs, while fundraising came to 12%. It takes a permanent staff of 10 plus 400 volunteers to run this operation. Founded in 1984, for the first several years everything was based on volunteerism, used cars, used office furniture, even used file folders etc. The organization can now actually pay for most services. For example, a full time grant writer has a competitive salary and is expected to produce many times her salary and benefits.

Your assignment

To be more efficient you will have to do more with less; and to be more effective you have to take a larger bite out of the homeless and hunger problem in that community. That is so by definition of the terms. The organization is currently well managed and yours is a hard act to follow. The accounting system gives you monthly numbers of income and expenses and the numbers are presumed correct. Your mission is to do the following:

- a) Develop new yardsticks that are helpful in measuring effectiveness and efficiency. Going back to 100% volunteerism is not an option.
- b) Here is a think-piece: Should success for this organization be defined as eradicating homelessness in this community, and then going out of business once it is accomplished?

Guidelines for developing answers with respect to effectiveness (doing the right thing) and efficiency (doing it right) are the following:

Effectiveness: (doing the right thing)

Survey what donors expect to see done to assure continued funding, involve donors in the debate, but how?

Interview visitors receiving meals to find the cause of their needs, and publish a research paper!

Estimate the market size of homelessness, rate of increase, %market served, to plan capacity

Draw a process diagram for the operation to seek process improvements and constraints in the system.

Efficiency: (doing it right)

You can either raise more money, or reduce cost of operations, or both. Use your imagination and try to be specific.

Benchmark against other similar organizations in the State, with respect to fundraising, cost etc.

Collect transaction data daily and make statistics available to management, daily dashboards

Apply accepted financial ratios for this field and find trends, donation growth etc.

Chapter 6 questions

1. If the tax laws did not permit not-for-profit organizations to exist, how much larger would government have to be to fill the void of social need? Do you think that in the 21st Century, government is a better venue to fill these needs than are NOP's?
2. More than 25 percent of the over 16 year old US population participated in a not-for-profit organization. Check the circle of your friends and make a list on who does what!
3. Consider a charitable cause you can personally relate to and go back to Table 6.2 and fill in the blanks

7 Measurements for web-based Businesses

Our deepest fear is not that we are inadequate; our deepest fear is that we are powerful beyond measure.
Marianne Williamson

There are several reasons as to why this chapter cannot be an exhaustive treatment of web-based business. First, the subject is barely two decades old and moving fast; so what is being said now is not the final judgment. Second, measurement efforts are driven by several priorities: technologists look at data to optimize network performance, while commercial practitioners want to increase sales channels to their customers and thereby create value. The Internet is the ideal product for the 21st century because it uses no natural resources to speak of, and it constantly renews itself. Value measurements used to be limited to land, labor and capital only. In our time, we can add to these measures information and intellectual property, most enabled by the Internet.

SMS from your computer
...Sync'd with your Android phone & number

FREE
30 days trial!

Go to
BrowserTexting.com

and start texting from your computer!

BrowserTexting

The advertisement features a laptop on the left displaying a web interface with a list of contacts and a text message conversation. A blue double-headed arrow connects the laptop to an HTC smartphone on the right, which also displays a text message conversation. The background is a light blue gradient with a dark blue diagonal banner in the top right corner.



Being new and dependent on technology, web-based businesses also have their own language, which outside Information technology (IT) departments is not always well understood. As a result, this chapter's discussion starts with defining a few terms:

1. The World Wide Web, also known as www or W3, is an information superhighway system of interlinked and accessible hypertext documents.
2. Hypertext is defined as text, pictures, and tables displayed on a screen. It may also contain references to other pages, which connections are called hyperlinks.
3. A web-browser is software that allows the viewing of web pages.
4. "Web analytics" is defined as the measurement and collection of Internet data. Now who would want to measure these data and why? Merchants certainly are interested parties to find out who their customers are, and Information Technology engineers may want to optimize network performance to meet future performance criteria. By the way, those parties who take the measurements don't necessarily ask for permission. Virtually all governments snoop on each other without ever having agreed to a code of conduct. It is also safe to say that Internet data collection relative to traffic and content, is neither benign nor beneficial to the public. Our own personal Internet access is generally free and we routinely and voluntarily make all sorts of data about ourselves available. Therefore, the argument is that we don't individually own the data about ourselves, traffic included.
5. An individual's web page information is an intangible asset. Unlike intellectual properties such as copy right, web data are intangible assets that cannot be owned.

Now we finally get to the point of addressing real web measurements, most of which fall into the category of on-site analytics like web site content, as opposed to off-site analytics that cover such items as online comments (buzz) and website potential (opportunity). As the name on-site implies, the measuring starts when a client connects with a web page. The driving force behind these measurements is the website owner's commercial interest. For example the website owner wants to know what page triggers sales, or the correlation between website traffic and a parallel marketing campaign. Other data sources may be email campaigns and their response rates, direct e-mail campaigns, lead generations, and click heat mapping. Heat mapping? That is the expression used for software that captures customer key strokes, website path, and tells the website owner where on a website customers can't find what they are looking for, or at what point on the webpage they abandon the shopping cart altogether.

Looking at the Internet in broad and sweeping terms, we can break down our onsite measurements into two aspects, Log Files and Page Tags. Log files capture data that is routinely produced by the server. It resides in the clients' computer. It is dependable and the analytics can be performed by the company's web master. Page Tags on the other hand are focused on identifying the source of Internet traffic, an example of which is the placement of those famous cookies by which one can identify a unique user. Another data source to segment traffic is called Internet Protocol Intelligence by which IP addresses' parameters that identify a source by geo-locations, such as country, state, city and postal code. To all the stuff marketers already know, add the following web measurements:

1. Hits: A hit is a request for a file. Hits are counted in order to measure popularity, the more hits the better. Since most websites contain numerous pages, the measure can be misleading and often overstated as each page request counts individually as a hit. It is not the best measure for counting visitors.
2. Page Views: A request for a file that is defined as a page in the log analysis. It may give rise to multiple hits as that page looks for pictures, for example. Also, a measurement of limited value.
3. Sessions: This is equal to visits. It counts the hits and page requests from one uniquely identified client within 30 minutes or less.
4. Visitor: To a business analyst a visitor is roughly equal to a customer or at least potential customer, hence it is very important. Visitors can be absolutely unique in that they have not made any prior visit. Repeat visitors by definition have made at least one prior visit, identified by a cookie mentioned earlier. The same person visiting via two or more devices will count as first visit each. Plus, Internet users who occasionally delete all their cookies and don't accept any to begin with, are counted as new.
5. Impressions: Each time an ad loads on a visitor's screen it counts as one impression, just as all ads in a newspaper count circulation, plus when a copy is sold and subsequently passed on. The higher the impression rate, the higher the advertising rate and it is not hard to figure out the interested parties in this form of commerce.
6. Time: Session Duration is the time a visitor spends on a website, and Page Duration is an average time a visitor spends on a page.
7. Click Path: This refers to the sequence of hyperlinks visitors follow on a given site, and it may imply interests and how interest is generated in the eyes of the customer. A simple click is the single event of a hyperlink being activated.
8. Ratings: Ratings are the most trusted source of consumer confidence in e-commerce. Ratings area often based on consumer reviews, movies or restaurants, for example. However, ratings are easily manipulated by commercial writers who are hired to create buzz which appears camouflaged as content.

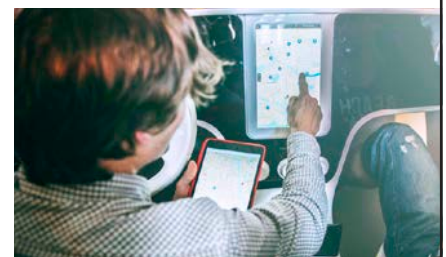
Measuring the Internet and drawing conclusions from it is an evolving field of study and not yet precise or mature. The effort to systematically count traffic only started as late as the mid-1990s. The matter is further complicated by the fact that cookies on personal computers can be deleted and browsing can be set “in private” to make identification nearly impossible. The sum of all visitors ought to be all new visitors plus all repeat visitors, and often it is not, because a visitor is more of an Internet event than a customer.

Given the immaturity of the measuring the Internet, and living in a world where a 15 minute meeting is an in-depth discussion, and where a look into the distant future covers up to 24 months or less, this is a good concluding point of this chapter. There are all manner of attempts to measure and game Internet traffic. Some researchers will attempt to capture all digital message traffic content, then classify by key word frequency, categorize as much as possible and correlate this to something like brand value to then sell such services as marketing intelligence. Others will design digital marketing programs to find the sales resulting from the last clicks across highly fragmented channels and then piece together a picture of customer behavior. Still other may want to compute a “Return of Influence” score from Face Book and Twitter posts. In particular, the quest is to find who is influencing whom through prolific blogging, and how much influence those being influenced have themselves. The influence measure here is a “score”, typically from 1 to 100.

**YOUR WORK AT TOMTOM WILL
BE TOUCHED BY MILLIONS.
AROUND THE WORLD. EVERYDAY.**

Join us now on www.TomTom.jobs

follow us on **LinkedIn**



#ACHIEVEMORE

TOMTOM 



Case 7

Do-it-yourself Hospital Patients? – Almost!

Presume that you are the webmaster for a community hospital in a mid-sized West Virginia town. The hospital is a well- respected institution and loosely linked to 13 other hospitals, which in total employ 36,000 workers and serve a 1.6 million population. The current website has existed for years and it is purely informational. The site says here we are, this is what we do, and it has a nice mission statement, a letter from the CEO who has an MD degree, and whose benign picture appears on the front page.

Your job is to comply with a new directive from the Board. The mission is to change the website from being an information warehouse, to becoming a patient empowering tool. You are asked to apply web analytics and measurements.

Ugh, web analytics? Yes, that normally means understanding how your website is being used in order to improve performance. While web analytics may tell you *what* is happening, they rarely shed light on *why* something is happening. Your principal job is to promote patient self-service through this redesigned website; and by the way, you are expected to measure this as you report progress over the development period. The emphasis on self-service is a modern characteristic of the Service Sector and was mentioned earlier. Self-service reduces costs for the service provider, and in this case it promotes individual responsibility for the patient's own health. Your role models are the Kaiser Family Foundation, the VA Hospital system and the Mayo Clinic.

For each of the following three questions develop a proposed action plan with measurements:

1. Reduce health care cost for chronic diseases for your employer! Industry experience data indicates that for each \$1.00 spent on asthma education, it is estimated that treatment costs is lowered by \$17.00.
2. How well does your new website provide answers to medical questions? When people can't find answers, they may call the hospital which constitutes a costly burden of the hospital, your employer. Your role model is WebMD.com.
3. How well is your website integrated with this hospitals' internal IT (Information Technology) system? IT, after all is about automation, or removing repetitive work from jobs. Can patients form peer-to-peer interest groups on chronic diseases and communicate with each other, meet and support each other? Can patients make mobile phone appointments or refill medications?

Case 7 Questions

The following three statements pertain to Case 7:

1. Make video downloads available for a specific list of medical problems, education on causes and remedies, dosage on medications, conflicts with other medications and side effects. Answer question of whether the educational content addresses the medical needs of the region? (black lung disease in coal mining West Virginia)
2. Websites have to have good subject specific contact information. Design and execute a survey to find out the top ten reasons why patients call, and provide FAQs, frequently asked questions.
3. Make private discussion groups available for patients to share experiences in health struggles? Tie comprehensive patient care system to pharmacy, to discussion groups, to video conferences, webinars for patients. Maintain a data base of valuable blogs from former patients.

8 Happiness, Social Media, Cause & Effect, Indexing and Employee Self-Measurement

Doing what you like is freedom, liking what you do is happiness.

Frank Tygar

Happiness

It is appropriate that a discussion of happiness at work precedes the social media discussion, because to be happy is being equated to being social, engaged and active. Bosses who don't gauge their workers happiness are missing out on important opportunities for better stewardship of the workforce. If one could get agreement on a universal definition of happiness, it would be possible to find a metric that works. But different scholars focus on different approaches. Economists measure happiness by what people value in Dollars, while neuroscience measures happiness in relation to rewards by scanning brain activity in areas related to pleasure, and psychologists look at how people feel in terms of mood. More conventional happiness indications can be found in the following areas:

1. A person with many positive experiences, as opposed to another person with only one major event like winning a lottery ticket, tends to be happier, according to the Harvard Business Review of January 2012. Frequency of positive feelings is a better predictor of happiness than is magnitude.
2. Couples with small children tend to be less happy than couple without children.
3. Winning an election, getting a promotion does not lead to happiness; conversely, nor does failing an examination automatically lead to unhappiness.
4. A management style based on fear, like saying get this done by Wednesday or you're fired, can sabotage the work environment and may lead to workers themselves undermining the work place.
5. Living a difficult life (a cause) does not automatically lead to creativity (an effect), as it was once believed in light of Beethoven's and van Gogh's background.
6. As suspected, rich people are happier than poor people, people in a romantic relationship are happier than those who are not, and healthy people are happier than sick people.

Translating this into management policy one draws the conclusion that management can help its workers thrive by:

Providing decision making discretion for workers, also called empowerment

Sharing information about the state of the enterprise, so workers can see their jobs related to the company and its mission

Minimizing incivility in business interactions; one can disagree without being disagreeable

Offering individual and group performance feedbacks; reinforce good performance frequently, celebrate often.

Workers can help themselves to thrive by doing the following, while management should encourage and permit it:

Taking frequent breaks and doing something else clears the air and refreshes. Frederick Taylor, father of Scientific Management, proved this concept in the early 1900s.



Brain power

By 2020, wind could provide one-tenth of our planet's electricity needs. Already today, SKF's innovative know-how is crucial to running a large proportion of the world's wind turbines.

Up to 25 % of the generating costs relate to maintenance. These can be reduced dramatically thanks to our systems for on-line condition monitoring and automatic lubrication. We help make it more economical to create cleaner, cheaper energy out of thin air.

By sharing our experience, expertise, and creativity, industries can boost performance beyond expectations. Therefore we need the best employees who can meet this challenge!

The Power of Knowledge Engineering

Plug into The Power of Knowledge Engineering.
Visit us at www.skf.com/knowledge

SKF



Workers can make their jobs more meaningful by finding opportunities for continuous improvement. Nearly every job can be improved and the quest for continuous improvements can be gratifying. Many successful enterprises allow employees time and space to search for opportunities.

Workers can seek relationships that energize, in order to be infected with that energy. A shy person may be counseled to hang out with successful sales people in order for positive dynamics to be transferred to the shy person. Doing something totally unselfish, a random act of kindness, could have huge benefits.

Workers can take inspirations that come from the work place into family life. Take sustainability for example, families can become more sustainable too.

On a global happiness scale, the United Nations publishes an annual Human Development Report which was mentioned in chapter 6 and works with measurements like infant mortality, income, education, access to clean water, food security, and longevity. Happiness in a corporate sense presumes that existential needs are met. North European countries score high in human development criteria, while some Middle Eastern countries rank high in relative dollar income terms.

Social Media

Social Media is what is happening all around us. The literature suggests a need to capture such data for purposes of understanding and manipulating the consumer. However, pointing to the need for new measurements is one thing, while actually doing it well may be yet to come. So, if the reader is interested in furthering a career, then by all means learn as much as you can about this phenomenon and help your employer benefit from it the same time. First let's clarify a few long words:

Social Media	how people get together (virtually) to accomplish outcomes.
Social Networks	describe groups of people congregating in a social medium.
Social software	tools that automate, scale, and abstract social activity

Success in social media will depend on leadership, while leadership in turn can be improved by social media. In the old print medium days analysts counted “eye-balls”, which means how many people saw the message. Until recently, counting eye-balls became synonymous to counting “hits”, that is, how many people clicked on your website. Clicks are most meaningful if the clicker also bought something. The new performance focus is on “engagement”, which is a measure addressing a direct interest in the brand, product or service. Engagements can be relatively passive, like looking up product specifications for an electric generator. Engagements can also be active, like asking questions or advocating a position, favorably or disapprovingly. An active engagers’ influence on other readers and bloggers can be very powerful. Active engagers are the people management needs to cultivate, because their work is seen by others as market based and therefore unbiased. Examples are theatrical performance reviews or restaurant experiences by active bloggers. Ready-made measurements for this don’t sit on a shelf to be chosen; instead they have to be developed with a specific situation in mind.

Marketing:

If the goal is marketing, one should try to segment audiences between those who only hear your message, those who believe in the offer, as determined by surveys, and by those who are buying.

Awareness:

If the goal is to promote awareness, focus the measure on how many times your message is passed along to other websites, feeds and blogs.

Reputation:

If the goal is to establish a good reputation of the firm, then the metric should center on relationship scores. The relationship score may be a function of certain phrases and their frequency appearing in many different communications.

Practitioners may have to design their own social media measuring system. Here are some guidelines:

Effective use of social media measurements requires a complete rethink from the old days when measurements were used to grade and categorize.

Rather than judging and grading based on old measurements, in the social media world one expects guidance. The guidance will tell us that clients have either a positive, neutral, or negative sentiment towards our offer. This need not be specifically our offer per se, but can also be the market realm in which we operate. Tracking these sentiments is now possible via text -analytics software that can categorize the content of online messages and links. A comment like “the restaurant is in a bad location but the food is wonderful” can be broken down into two separate issues, one positive and the other negative. Text analytic software packages exist that may already understand the unique language of your industry. It is very likely that the Internet world is not talking about our special brand, but understanding the sentiment of the industry is important.

Adding a bit of required humility to this chapter, practitioners should understand that customers care little about a specific brand, a product or a service. Customers are mostly concerned about themselves. Selfish customers express this in price, quality, function, design and perhaps inferred status.

Apart from the text analytics that identify themes in social conversations, one should also capture descriptive statistics such as how many reviews were written in Facebook, and what channels are popular. For example, the fact that Ford Motor Company did not require, or ask for, a financial rescue from the US Government, probably had a positive effect in the social media. The degree to which this is true can now be quantified.



> Apply now

REDEFINE YOUR FUTURE
**AXA GLOBAL GRADUATE
PROGRAM 2015**

redefining / standards 

agence.cdg. © Photonistop



Cause and Effect

For the average man or woman on the street, there is a fair amount of confusion about cause & effect. For example, a tabloid reports that early teen agers who read at least one book per month wind up in higher paid managerial positions by the time they are 30 years old. Would it be reasonable then to presume that reading causes income? The answer is most likely no, but growing up in a literate household is more causal than just reading alone.

What we can agree upon is that causality is the relationship between a set of factors called causes, and a resulting phenomenon called effect. If (A) causes (B), then we know that (A) must exist and it must come first. Even a categorical statement that smoking causes cancer is not entirely accurate, because people who don't smoke can get cancer as well. To get around that logic we use probability. Cause (A) has a high likelihood of resulting in effect (B).

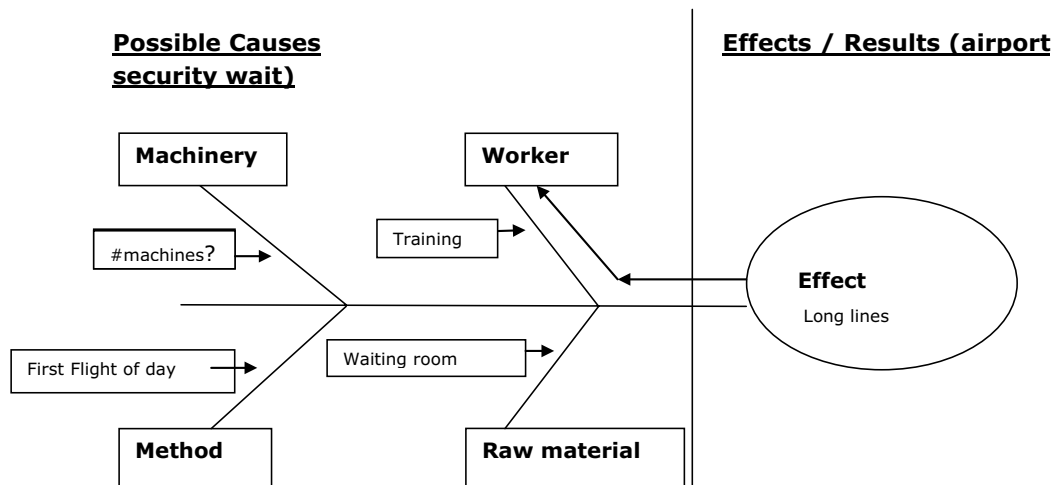
Necessary condition: If (A) defined as early reading is a necessary cause of (B) defined as management job at age 30, then the presence of (B) a management job implies the presence of (A) early reading having taken place. The presence of (A) defined as early reading does not however imply that (B) a management job will occur later.

Sufficient condition: If (A) defined as early reading is a sufficient cause for (B) management job to occur, then the presence of (A) early reading implies at least the existence of (B) management job. However, it is possible that something else (z) may have caused (B).

The mathematics of Cause and Effect discussion can become very complicated in fields of study like physics, biology, medicine, psychology and testing the efficacy of new medications for the purpose of NIH approval.

For our purposes let's take a closer look at the so called Cause & Effect Fishbone Diagram, attributed to a Japanese business scholar by the name of Ishikawa. The technique is part of the Six Sigma (see chapter 4) bag of tricks and it helps us to identify possible causes after we have observed an effect for which we have no reasonable explanation. In addition to that, the fishbone diagram is a wonderful communications tool. For example, let say the effect you observe is that people have to wait too long (>20 minutes) at an airport security facility. You can ask all your TSA associates into a room and brain storm any possible sets of causes. The wisdom of workers, as in crowds, should not to be minimized in any situation. The objective is to find the likely cause of a certain problem, rather than address the symptoms.

Cause and Effect Diagram applied to Airport Security Waiting Lines



Indexing

In the context of this book, an index qualifies as a measure all by itself. Specifically, an index is a formula that expresses the relationship between one dimension to another dimension, where the dimensions can be prices, production, or wages, among others. An index often measures the percentage change from a past point in time, at which point the index was given an arbitrary reference value of 100. Indices are constructed, invented and redefined to fit a given need at the time. We have already mentioned the United Nations’ Human Development Report which includes many indices, one of which is called Gender Inequality Index. That particular index measures 3 dimensions across the globe, namely reproductive health, empowerment and labor market participation. Sovereign nations are tracked from year to year with respect to progress along those lines.

An index everybody is familiar with is the CPI, Consumer Price Index. It has two dimensions, which are prices and weights. It is intended to answer the question of how much a consumer would have to earn, or spend, in order to maintain a standard of living as defined by an earlier point in time. The general formula looks like this:

$$CPI = \sum_{i=1}^n CPI_i * weight$$

The US CPI is computed from 95,000 items at 22,000 stores and 35,000 rental units. The weights, the sum of which is 1.00, are the following: .414 housing; 0.174 for beverages; 0.170 for transportation; 0.069 for health care; 0.06 for apparel; 0.044 for entertainment; and other categories are weighted 0.069. Taxes are not included in the CPI. Since wages, prices and pensions are sometimes adjusted by this index, it is a very influential measurement.

The literature on indices is very extensive, and naturally, statistical considerations loom large. Related indices measure core inflation, cost of living, higher education prices, personal consumption etc. They are too numerous to count here.

Employee Self-Measurement

Would not nearly every working person want to know

1. If a good nights' sleep results in more productive work the next day?
2. How much time is wasted with distractions or Internet cruising at work?
3. Does a rough day at the office affect blood pressure?

The trouble is the boss would like to know also, and the fear of Big Brother is a real issue, legally and ethically. There are two approaches to employee self-measurement.

“Knowledge Workload Tracking”, is a computer-based software package that keeps track of how much idle time a computer experiences during the day, how long the worker stays on the same screen, how much time is spent chatting interactively etc. All of this can be fairly benign if it turns out that chatting with customers promotes more work getting done and collaboration.



LIGS University
based in Hawaii, USA

is currently enrolling in the
Interactive Online **BBA, MBA, MSc,**
DBA and PhD programs:

- ▶ enroll **by October 31st, 2014** and
- ▶ **save up to 11%** on the tuition!
- ▶ pay in 10 installments / 2 years
- ▶ Interactive **Online** education
- ▶ visit www.ligsuniversity.com to find out more!

Note: LIGS University is not accredited by any nationally recognized accrediting agency listed by the US Secretary of Education. More info [here](#).



“Cognitive – Mapping”, is also software based. For example, an office worker will get a software-generated email at the end of the day asking to record how the day was spent. At month-end, the resulting statistics help workers understand themselves better and improve their own productivity. On the principle that working on a variety of projects during a day helps renew and refresh and prevent boredom and discouragement, another software program may send workers messages to change the pace and do something else. In the same vein, yet another software program may occasionally send puzzles to help sharpen mental acuity during the work day. Cognitive Mapping can easily become part of a corporate wellness program, which about one-third of US corporations already provide through third party contractors.

Workers can initiate these measurements for their own benefit; sharing findings voluntarily with other workers and even with management, which is the way to address privacy- and boss issues. Any sort of intimate measurements initiated by the employers can easily become problematic on grounds of data protection and data misuse.

Case 8: Betcha our staff is happier than yours!

Background:

You have a nice job in Human Resources with Company A, located in an industrial park in a neighborhood of many large and small factories. Every workday you have lunch at a local diner, and over the years you have befriended another person who also works in Human Resources for Company B. You both thought that your respective employer has the happier employees. The only way out of this dilemma was for you to agree on inventing a measurement, which you called the Hypothetical Happiness Index (HHI). A small wager was agreed to, and the bet was for the winner to buy the loser a tuna fish on rye, chips and coffee. Both companies are in the same industrial classification, work with similar technologies, and both are mid-sized firms with similar corporate cultures. Your core data comes from each company's last years' public- and audited annual reports, and from similar internal surveys Human Resources departments normally undertake. You both have read studies that indicate that happy employees and company success are statistically linked and can be measured in terms of

1. Greater productivity that leads to increased profit
2. Better personal health, that leads to lower insurance premiums and fewer sick days
3. More loyalty, which leads to better customer service and greater innovation
4. Improved job satisfaction, leading to lower turn-over.

Objective:

Complete a given HHI index template for those two companies, in which case the larger the index value, the happier the company is implied. Use last years' yearly data from annual reports and survey results,
 $HHI = \sum (\text{value}) * (\text{weigh})$

Basic Data:

HHI	Definition	Company A	Company B	Weight	Company A – Value	Company B Value
Productivity	Output/Input Net Sales Cost of Sales	112MM 87MM	226MM 195MM	0.3		
Health	Avg. sick days Per employee/year If <= 10 weight = 0.1 If >10 weight = 0	15	7	0.1		
Loyalty	Customer survey Satisfaction From 1 to 5 5 = best	2	3	0.4		
Job Satisfaction	% enjoy %frustrated %boring (from surveys)	.48 .12 .40	.10 .52 .38	+ 0.2 - 0.2 - 0.2		
Totals				Max = 1.0	HHI =	HHI =

Answer:

Basic Data:

HHI Measure	Definition	Company A	Company B	Weight	Company A Value	Company B Value
Productivity	Output/Input Net Sales Cost of Sales	112MM 87MM	226MM 195MM	0.3	$(112)/(87)*0.3$ <u>0.39</u>	$(226)/(195)*0.3$ <u>0.35</u>
Health	Avg. sick days Per employee/year If <= 10 weight = 0.1 If >10 weight = 0	15	7	0.1	<u>0</u>	<u>0.1</u>
Loyalty	Customer Satisfaction From 1 to 5 5 = best	2	3	0.4	$(2)*(0.4)=$ <u>0.8</u>	$(3)*(0.4)=$ <u>1.2</u>
Job Satisfaction	% enjoy %frustrated %boring	.48 .12 .40	.10 .52 .38	+ 0.2 - 0.2 - 0.2	$(0.48)*(0.2)=$ <u>0.1</u> $(0.12)*(-.2)=$ <u>-0.02</u> $(0.4)*(-0.2)=$ <u>-0.08</u>	$(0.1)*(0.2)=$ <u>0.02</u> $(0.52)*(-0.2)=$ <u>-0.1</u> $(0.38)*(-0.2)=$ <u>-0.08</u>
Totals				Max = 1.0	HHI 1.19	HHI 1.49

Condolences! Your friends' employees in Company (B) are happier than the employees in your company, principally because they score higher in loyalty, and the rubric of loyalty was assigned a large weight. You owe your friend a tuna fish on rye with chips and a cup of coffee. Tell your friend it may be taxable income! Also observe that the assignment of weights should be based on real evidence. Once you are "happy" with your index, try to make the index 100 for the current year, and measure progress in the years to come.

Chapter 8 Questions

1. Are you improving your income? Try tracing your after tax income changes with the CPI
2. Can you estimate what causes the salad bar in our local super market to look so wilted? Draw a cause and effect diagram.
3. Think of an example that describes your participation in social media and how it may affect your life and well-being, positively or not.

TURN TO THE EXPERTS FOR **SUBSCRIBE** CONSULTANCY

Subscribe is one of the leading companies in Europe when it comes to innovation and business development within subscription businesses.

We innovate new subscription business models or improve existing ones. We do business reviews of existing subscription businesses and we develop acquisition and retention strategies.

Learn more at [linkedin.com/company/subscribe](https://www.linkedin.com/company/subscribe) or contact
Managing Director Morten Suhr Hansen at mha@subscribe.dk

SUBSCRIBE - to the future



Summary

Let's review the key points this book addressed.

To the average person business measurements are a given, they are presumed fixed in usage and time and universally accepted. As our surroundings change, so also have to our measurements. The time to rethink performance measures in business and in private life is now!

For measurements to be appropriate, they have to be support the organization to which these measurements are applied. Accordingly, this book addresses major measurement ideas for corporate management, for the office environment, for the service- government- and manufacturing sectors of the economy, the not-for-profit market place, web-and Internet market, wrapping up with measurements in social media, indexing, and happiness at work.

Taking measurements should come before making decisions. Decisions on the other hand, should be based on converting raw data into information, and be supported by a rigorous dose of unemotional logic.

IT (Information Technology) measurements focus on the acquisition of data, the transformation of data into information, data transmission, data sharing and security. The quality of information is based on accuracy, timeliness, completeness and relevance.

Benchmarks are useful for establishing best of breed guideposts for an organization to aspire to. Better yet, a corporation should aspire to be the one again whom all others benchmark.

Key Performance Indicators (KPIs) are customized measurements for special applications in consulting and supply chain management, for example.

Sustainability in any commercial operations is a continuous process of improvements with the ultimate goal of meeting the needs this generation without compromising the needs of the next generation, applied to resource use, cost, and environment.

Before we can measure quality, we must first define what quality means in the context of a given situation.

Measuring the public sector is to control the nations' infrastructure such as pensions, public health, border safety at sea and in the air, to name a few. It is an ever increasing percent of public spending and also an increasing portion of GDP. Measurement focus is on public finance, strategic leadership, government employment, public procurement, regulatory governance issues.

The not-for-profit sector is composed of organizations that are similar to corporations, except that major measurements focus on narrowly defined outcomes, from animal rights to prison ministry. Academic measurements should pertain mostly to teaching and teaching outcomes.

New on the horizon is the Word Wide Web. Here the focus is on reaching out and connecting by measuring clicks, visitors, downloads and paths to purchase. It is a great field for innovative measurements that may lead to a competitive advantage.

Equally new is the field of social media where the movement is away from accounting for eye balls or impressions and to paths-to-purchase in a social medium. It is about how people virtually connect in a social medium and then affect outcomes in the real world.

Next Steps

The reader has been introduced to the field of measurement as it applies to the world of commerce. In particular, the corporate workplace, the service sector, the manufacturing sector, the governmental sector, the no-for-profit sector plus the Internet; and we wrapped it all up with quantifying happiness, handling indices, being careful with not jumping to conclusions when it comes to cause & effect.

Should an employer send the reader to a trade conference at a sunny spot in the middle of the winter, he/she is probably well prepared to contribute to a conversation on measurements on the conference floor, or the inevitable cocktail party. A good next step may be to put learning into practice.

1. Do a literature search on measurements specific to an enterprise near and dear.
2. Sprinkle the literature search with trade sources, academic articles, of domestic and foreign origins.
3. Get friends, customers and suppliers involved in the ensuing discussion.
4. Propose a research project on your own time that asks: if we measured XYZ differently, what conclusions would be drawn from that?
5. Would our understanding of cause & effect be altered?

Above all, have fun learning more about the nature of measuring our work place and become more competitive.

References

Achor, S. "Positive Intelligence", Harvard Business Review, January-February 2012, page 102.

"Book Cooking Guide, Government Accounting", The Economist, April 7th, 2012, p. 84.

Chase, R.B, F.R. Jacobs, and N.J. Aquilano. "Operations Management for Competitive Advantage", NY: McGraw-Hill Irwin, 2006.

Consumer Price Index, <http://en.wikipedia.org>

Fitzsimmons, J.A, and M. Fitzsimmons, "Service Management". NY: McGraw-Hill, 2008.

Goldratt, E., and J. Cox. "The Goal." Great Barrington: North River Press, 2004.

Klean, Web Analytics for Hospitals, the Business Case for Patient Care, <http://www.klean.dk>.

Kiron, D., Palmer D., Nguyen A., Kruschwitz, N., "Social Business: What Companies are Really Doing: Key Findings", MIT Management Review, part 2 of 12. 2012, sloanreview.mit.edu.



"I studied English for 16 years but...
...I finally learned to speak it in just six lessons"
Jane, Chinese architect

ENGLISH OUT THERE

Click to hear me talking before and after my unique course download

Melkers, Julia, and Willoughby, Katherine, “Models of Performance Measurements Use in Local Governments, Public Administration Review,” March–April 2005, 65:2.

OECD, “Measuring Government Activity”, ISBN Number 9789264060722, 29 April 2009, www.oecd.org/retrieved 4/23/2012.

SAS, Social Media Metrics, conclusion paper, www.sas.com/offices

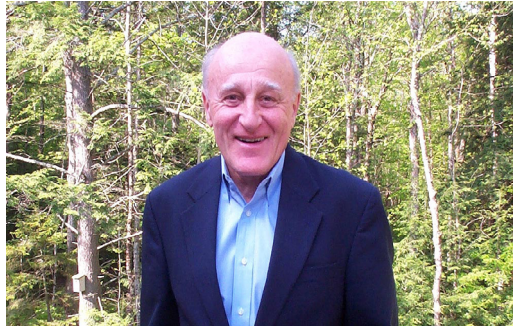
Shakespeare, William. *Measure for Measure*. <http://shakespeare-online.com/quotes/measurequotes.html> (Retrieved 1/24/2012)

The Urban Institute, Building a Common Outcome Framework to Measure Non-Profit Performance, 2006.

What Works, Building a Common Framework to measure Nonprofit Performance, The Urban Institute, Washington DC, 2006.

Wolf, F. and Mujtaba, B., (2013)“Sustainability in Service Operations”, Information Systems in the Service Sector, series of Advances in Information Systems in the Service Sector, IGI, 2013.

About the Author



Frank Wolf, D.B.A.

Dr. Wolf is an adj professor of the H. Wayne Huizenga School of Business at Nova Southeastern University in Ft Lauderdale, Florida, USA, where he teaches Operations Management, Supply Chain Management, 21st Century Business Practices, and Quantitative Modeling in the weekend Decision Sciences MBA program. He is also a partner in a Corporate Solvency Stress Testing L3C, where supply chains get stress tested for solvency among other issues. In addition, Dr. Wolf is an arbitrator/mediator for FINRA, the Financial Industry Regulatory Authority, involved in the settlements of financial disputes among brokers and their customers. He resides in Vermont and is an advisor to corporations, writing on supply chain sustainability and risk, and service process improvements in manufacturing and services.

You can reach the author at

frkwlf@gmail.com.

802-388-9911 (USA)