# Management By Systems (MBS)
## --An Innovative Approach based on Systems Thinking

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Every executive's performance is measured by how effective he/she is. In spite of your degrees, qualifications and experience, you are judged by your effectiveness. Here is a simple formula leading to sustainable effectiveness.

## A Simple Formula for Executive Success:

The simple formula I have practiced for years as an executive seeking effectiveness can be summed up as follows: Any given day, ask yourself these five simple questions:

1) Do my team and I know clearly the objectives and goals for our project, department and organization?
2) Do my team and I know clearly the current resources available to achieve our goals and objectives?
3) Do my team and I know clearly the additional resources needed to achieve our goals and objectives?
4) Do we have the most creative and cost-effective solutions to transform the existing system or program to the proposed system or program?
5) Do we have a dynamic cost-effective implementation plan that can be adapted continuously, and are we implementing the plan in a timely manner, and providing feedback to all concerned?

If the answer is yes to these questions, you would be an effective executive for the next day, week, month, year and years! Actually, this recipe for effectiveness – setting goals and using resources most cost-effectively --  applies to all humans, not just executives!

This formula is based on the **Management By Systems (MBS)** concept I developed in the late 1960s, and then applied to many organizations ranging from individual proprietorships and small companies to national programs in the US, India, Puerto Rico, Venezuela, Mauritius and many other countries. Systems approach is nothing but organized common sense. Everyone from the President of the United States and the Prime Minister of India to a simple office worker is essentially a systems person. Every one is trying to set specific goals and objectives, consciously or unconsciously, whether on a daily, weekly, monthly, yearly or multi-yearly basis, and then trying to figure out how he/she can use available resources most cost-effectively to achieve those

goals and objectives. Thus, using resources most cost-effectively to meet specific objectives and goals—this is what MBS is all about!

## Setting Goals and Objectives:

You must set specific, measurable, achievable, realistic and timed goals and objectives. Without specific goals, how can you lay out a path to get there? Many executives, especially in the public sector, tend to be process-oriented rather than goal-oriented. While advising the Presidents and Prime Ministers as well as executives of small to large companies, I found this to be quite true. They resist change, specially the public sector executives. They would rather deal with the devil they know rather than the angel who may be out there – my definition of bureaucrats! Many of them start out as "crisis managers," and remain the same till the last day of their job!

On the other hand, leaders willing to take risk and think out of the box, can help make enormous beneficial changes for their organizations and countries. Case in point- a young Rajiv Gandhi, while being groomed by his mother, Indian Prime Minister Indira Gandhi, was willing to set a vision and goal for India -- make it an IT power by making the best use of India's major resources, especially educated manpower. When we first discussed the concept in the early 80's, he quickly captured the rationale I laid out: India was ideally suited to become an IT power for three reasons:

1) English language, the language of the coming IT age
2) India was producing more math, science and engineering graduates than any other country—and these graduates can easily be trained in IT, since IT requires the same logical thinking skills
3) Indians loved working with computers –I had brought a few Indian IT professionals to work with me to design and implement an information system for Venezuela in the 70's, and they were happy to work most days till midnight, when the security asked them to leave!

So, the concept was to open India up and invite technology companies to come set up shop in India and train millions of Indians in IT. When Mr. Gandhi later became Prime Minister, India was able to implement a plan to achieve this vision!

Another example: In 2006, the Prime Minister of Mauritius invited me to help his country change its economic course. I went to Mauritius as a volunteer as I had done previously working with Mr. Rajiv Gandhi. First, I gave a seminar to the Prime Minister and his entire Cabinet on Management By Systems (MBS). Then, we formed a team of public and private sector leaders. The team first identified the vision and mission as transforming Mauritius from a sugarcane and tourism-based economy to an ICT-based economy by making it an ICT bridge between India, very advanced in ICT, and Africa, very backward in ICT. The team set a goal of training 400,000 Mauritians, one-third of the total population, in digital literacy. Our Foundation, the National Education

Foundation (NEF), trained over 100,000 people, and is on track to become an ICT-focused nation.

Remember, it is better to set high goals. I used to tell the young tennis players in our Florida tennis academy that if you are going to spend 4 hours a day hitting tennis balls in the hot Florida sun, don't shoot to become Florida champions, shoot to become World champions, and three of them did- Andre Agassi, Monica Seles and Jim Courier! As an executive, you need to set high goals for your team, and then motivate them to get there. You see-- leaders and executives with clear visions and goals can help make a significant difference in the lives of their employees, superiors, target populations, clients, partners, people and humanity!

Every goal should be measurable, as far as possible. The three most popular performance measures are effectiveness, efficiency and effort.

**Effectiveness:**
From a system standpoint, effectiveness is the extent to which the output from your system achieves the goals and objectives. This is the most important performance measure. If an investment manager promises 10% annual return, as an investor, you are very happy if he/she exceeds that goal. You don't really care how he/she achieved it. If a school principal exceeds his/her graduation goal of 80%, or if one of your sales managers exceed the sales target, you consider him/her an effective executive.

**Efficiency:**
Efficiency measures the input output ratio, from a system standpoint. If you can get more output with the same input or if you get the same output with less input, you have a more efficient system. If you have a new system that produces a pen at $1 a pen, it is more efficient than your present system that produces a pen at $2 a pen.

**Effort:**
Effort measures the extent of resources you deploy in a system. For example, if a sales person puts 60 hours a week rather than 40 hours a week, he/she is obviously putting more effort.

In designing and operating systems, you want to ensure first and foremost that your system is effective , then make it efficient, and third, ensure enough effort is put forth to achieve the system goals and objectives.

An efficient system, that is not effective, is not acceptable. In the example of producing pens mentioned above, the efficient system that produces a pen at $1 cost rather than at $2 per pen is not acceptable if the $1 pen's writing quality is not up to the standard!

As an effective executive, you want to constantly ensure compliance with your effectiveness measure, then make your system more efficient, and thirdly verify the effort involved meets the defined level.

Always make sure that you are pointed in the right direction in terms of meeting your goals and objectives. If you decide to go from Washington, D.C to Los Angeles, located west of Washington DC, and in a hurry you get into a fast car and drive East at 100 miles an hour, you will end up in the Atlantic Ocean! So, always make sure you are going in the right direction to achieve your objectives and goals, and then make your system more efficient.

When I helped develop the drunk driving patrol program in Puerto Rico, we evaluated the program effectiveness by the reduction in alcohol-related accidents, effectiveness by the number of arrests per dollar spent and the effort in terms of the patrol man hours.

## Mapping the Existing System Resources:

Next, map the existing system or program resources available.  These resources consist of: human, financial, information, technology, physical, material, time etc.

### Human Resource:
When I give seminars, I usually ask the question – Which of the above resources is the most important? The answer I often get is 'financial.' Not true -- the most important resource is indeed human! It is the human resource that makes every other resource utilization better! Of course, money is important, but human resource in a system is more important.

### Financial Resource:
After human, financial resource is the most important. Without sufficient funds, it is hard to create an effective system or program. You should consider all options for raising the money needed in the most cost-effective way. Often, out-of-the-box thinking helps here!

### Information Resources:
We are in the information age. Information around us is exploding at an exponential rate. Internet is inundated with all kinds of information on all kinds of topics. First of all, identify what specific information you need. Then collect it from dependable sources, and use it effectively. Do not go out and collect all kinds of information, and then try to fit it into your system design.

### Technology Resources:
Technology is also progressing exponentially. Dr. Gordon Moore, the founder of INTEL and the inventor of the computer chip, with whom I had many interesting discussions, predicted years ago that the computing power would double every 18 months. He has been right so far! What a big mainframe computer taking up rooms of space could do a

few years ago can be done by a desktop or laptop computer now! With all kinds of new gadgets emerging daily, technology is evolving at a rapid pace. You need to keep up with the technology affecting you, your team, your projects and your organization on a continuous basis!

**Physical and Material Resources:**
In spite of the exponentially expanding virtual World around us, we still need physical resources such as buildings, and material resources such as supplies. Here again, you need to be able to understand their changing nature, so as to enable you to make the most cost-effective decisions. For example, you may be able to save money and improve the environment at the same time by employing energy efficient/green buildings and supplies!

**Time:**
Time is a very important resource for everyone. During my seminars, I often pose the question -- what one source is both capitalist and socialist? Looking at the blank faces in front of me, I say that the answer is 'God'! You see, God gives everyone 24 hours a day, from the moment one is born to the moment one dies! This is a socialistic concept. Then, God says what you do with your time is what determines how happy you are, how wealthy you are etc. This indeed is a capitalistic concept -- allowing one to make one's own decisions to use one's time in the manner one see's fit to meet one's objectives and goals!

You must use your time very effectively. It is always good to decide how much time you want to devote to specific tasks and programs. Setting priorities for managing your time is important.

Most of you think that there is not enough time in the day to get your work done. Writing down the time spent on your daily tasks, then analyzing and prioritizing them, will help you manage your time a lot better. For example, taking a minute to write down what exactly you want to communicate during a meeting or phone conversation, will enable you to communicate the message to the participants more effectively in less time.

In my own case, I attribute effective time management to many of my successes. Growing up in India, from early primary school days on, I was a top student, athlete and soccer player, a difficult-to-maintain situation, since top students study most of the time and top athletes focus on their play mostly. So, in order to compete with the top students in the classroom and the athletes and soccer players in the playing field, I devised an effective time management system. I studied all the books for the coming school year during the summer vacation, so that during the school year, class work was mostly review for me. That gave me enough time to compete with the athletes and soccer players during the school year! This worked out for me. When I graduated from the engineering college

of the populous Kerala University in India in 1963, I was the university athletic champion and soccer team member s well as a top student. That earned me a Tata scholarship, equivalent to the Rhodes scholarship in the U.S., to pursue my graduate program in the U.S.

Time is also a major factor contributing to the U.S. being ranked 24 out of 28 developed nations in math and science. The average American student attends school 180 days a year, compared to 220 or more days for students in most Asian countries like Japan and Korea. Unless the U.S. political leaders and educators address this problem by increasing the school days and hours, U.S. students would have a tough time catching up.

I have a theory: anyone--individuals, groups, organizations, communities and countries—who deploy time better has a leg up over competition in this fast-paced 21$^{st}$ Century knowledge-based global economy!

## Mapping the Proposed System and Resources:

In this phase, you and your team want to define the proposed system -- what additional resources you need. For example, if you are attempting to improve a school system, you need to define additional resources needed to meet the defined goals and objectives -- teachers with specific qualifications, students meeting specific admission requirements, course materials, technology resources, mentoring and motivational resources etc.

For example, our Foundation has set up several CyberLearning STEM (Science, Technology, Engineering, Math) Academies in disadvantaged schools across the U.S, to fulfill one of our ambitious mission goals – to set up such academies in most poor schools in the U.S, by 2020. In setting up such academies, we employ the CyberLearning system concept I developed after I coined the word 'cyberlearning', my contribution to the English language! CyberLearning looks at any learning program as a system that transforms the students admitted into a program into graduating students with specific well-defined skills and values. The CyberLearning resources most important in achieving this transformation of admitted or input students to graduating or output students are defines as HTCMM, meaning Human (Teacher, Parent, Administrator), Technology, Courseware, Mentoring and Motivation.

By providing appropriate professional development and motivational rewards for the **Human** catalysts**- t**eachers, parents, administrators, guiding the **T**echnology improvement, donating 6,000 Web-based online high quality individualized **C**ourses mapped to the U.S. national Core Curriculum standards, offering **M**entoring to teachers, students and parents, and **M**otivating teachers with performance-based stipends, students with rewards such as iPods and parents with awards, we have been able to improve student scores significantly at a cost far below the market cost for such a solution. See **www.cyberleraning.org** website for more information.

We found that one of the most cost-effective solutions to improve student skills and scores is to provide mentoring and motivation. Yet, you will hardly find funds for these in any school or education budget.

I am frequently asked what prompted me to give a 100,000 dollar scholarship to young Andre Agassi or Monica Seles coming from non-affluent families. My answer is 'motivation' – the burning desire to be the best. I have seen young Monica hit hundreds of tennis balls against the wall all by herself after a grueling day of practice.

When Andre Agassi contemplated quitting tennis as he found it hard to break into professional tournaments, I reminded him of the need to re-ignite his motivation and the thousands of hours he put in to reach his goal of becoming a tennis professional. Then, I urged him to practice the 3 P's – passion, perseverance and patience. Sure enough, he got his big break soon by making the semi-final round in a sanctioned tennis tournament, and the rest is history.

## Developing Solutions

Once you have mapped your existing and additional resources, you can think of optimal solutions to transform the existing system and resources to the proposed system and resources in the most cost-effective manner. This is where you and your team can employ out-of-the-box and creative thinking tools and techniques. Most systems or programs, especially the public sector ones, are not very effective. The reason for that is—the system or program goals change over time, but the system process remains little changed. So, there is plenty of opportunity to improve most systems by coming up with creative and effective solutions that will deploy resources better to accomplish well-thought-out goals and objectives.

For example, in 1993, when our Foundation set a goal of training a million disadvantaged students in IT, we thought out of the box, and decided to apply the Cyberlearning concept of doing the training on the Web, even though there was very little discussion of interactive Web-based training in those days.

Optimizing an existing system or program is the traditional way to improve the performance of a system. But remember – creative thinking may provide more cost-effective solutions! Case in point- developing World-class tennis champions. The traditional way is to improve their strokes, stamina etc. by hitting dozens of tennis balls. When I was told you can't create World tennis champions when I bought the tennis academy in Florida, my answer was: you can create World champions if you take talented kids and put them in the program, give them all the tools and make training fun for them. So, we applied the systems approach, thought out-of-the-box, and created a Total Tennis program emphasizing mental toughness, physical conditioning, strategy and weapon strokes – the two or three dependable strokes one can call upon at critical times. We also worked on improving the players' reaction time and movement time. Then, by

giving our youngsters the opportunity to play in tournaments during the weekends, and practice with tennis professionals at the academy, we helped build their self confidence. The result: three World champions - Andre Agassi, Monica Seles and Jim Courier. See **www.cyberlearning.org/tennis**
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# Creating an Implementation Plan:

Once you have defined your goals, mapped your resources and created solutions, it is time to develop an implementation plan. Such a plan should show on a day-to-day or week-to-week or month-by-month or year-to-year basis the performance measures - effectiveness, efficiency and effort, tasks and milestones, those responsible to carry out the tasks, costs and benefits.

The plan will allow you to compare the actual vs the planned, and take measures to solve the bottlenecks or problems in a timely manner to avoid delays in implementation. Thus, you can now apply Management By Systems (MBS) rather than Management By Crisis or MBC as I call it!

Remember, you must involve all interested stakeholders in developing the plan, continuously monitor the progress of implementation and provide feedback to all involved. This is the key to creating and implementing a successful plan.

Case in point: When I was advising the Government of Venezuela to improve the "unmanageable" Social Security and Healthcare program, which consumed more of the national budget than any other department, the first thing I realized as the key to success was bringing all the leaders of the stakeholders-- government, labor union, chamber of commerce and medical association—together from the very beginning and make it their project, and engaging them in consensus building from the goal setting phase to the implementation and monitoring phases.  The result was phenomenal -- transforming the national program from a deficit to a surplus operation, changing the information system as well as sick leave and pension payment systems and improving the quality of service.

You can improve the plan and the implementation on a continuous basis, based on the feedback.

You can apply the MBS systems approach to any project. It is easy to apply.

I am often asked how I built our foundation (NEF) from scratch to the global nonprofit leader in bridging academic and job skills divides in a few short years. My answer is this: We apply 3 principles to all our programs: 1) Look at everything as a system, and apply the MBS approach detailed above; 2) Always shoot for the highest quality in finding and deploying resources and programs; 3) Apply the win-win-win-win formula to make partners, our foundation and the community winners, but the most important winners have to be the target populations or clients we all strive to serve.

While I was the owner of the tennis academy in Florida, I heard someone say that one of the players got lucky and won a match. I told him that 'the harder and smarter you work, the luckier you get.' This applies to everyone including you and your employees. See the following page to see a simple MBS Plan chart you can use to plan and implement any project or program.

# MBS Systems Analysis Chart

**Resources**

| Input | | Output |
|---|---|---|

**Environment**

**Objectives and Goals**
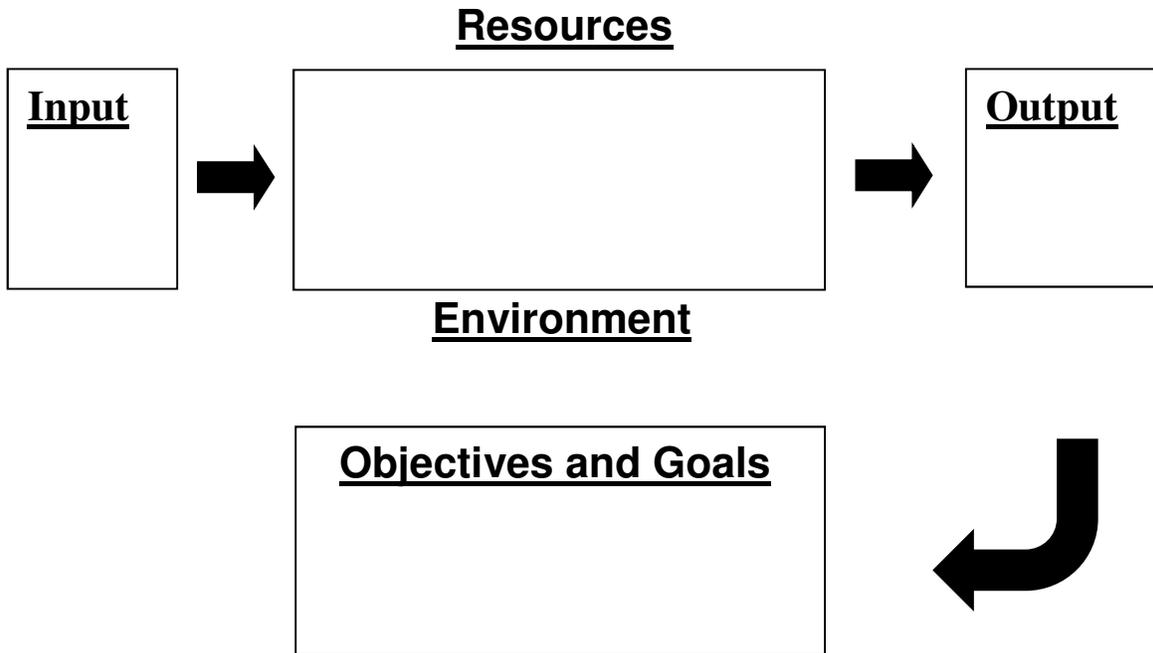
# MBS SYSTEMS SOLUTION CHART

| System Element | Solution or Measure | Cost | Benefits | Cost-Benefit | Other Criteria (specify) | Priority |
|---|---|---|---|---|---|---|
| **Functions Objectives, Goals** | | | | | | |
| **Outputs** | | | | | | |
| **Inputs** | | | | | | |
| **Process** | | | | | | |
| **Resources**<br>• **Human**<br>• **Financial**<br>• **Information**<br>• **Technology**<br>• **Physical**<br>• **Materials**<br>• **Time**<br>• **Others(Specify)** | | | | | | |
| **Environment(specify)** | | | | | | |
| **Integrated (more than one element)** | | | | | | |

**MBS System Project:** _____

**Plan** by Day, Week, Month, Year (Choose)

**Day, Week, Month, Year (Choose):**

| Performance Measures | Effectiveness (  ) | | | | | | | | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | Efficiency (    ) | | | | | | | | | | | | | | | | |
| | Effort (        ) | | | | | | | | | | | | | | | | |
| **Responsibility** | **Tasks and Milestones** List various planning (studies, agreements, plans etc.), operations support (recruitment, training, certification etc.), operations ( running the program etc.) and evaluation tasks, and their milestones | **Schedule and Cost** **Time Period (specify)** **Day, Week, Month, Year  (choose) of:** | | | | | | | | | | | | | | |
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| **Total Cost** | | | | | | | | | | | | | | | | | |
| **Benefits** | | | | | | | | | | | | | | | | | |
| **Cost/Benefit** | | | | | | | | | | | | | | | | | |