

# Virtual Control – An Efficient Management Practice

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**Abstract**— Management is very broad concept. In the past, management meant managing a business firm, as an extended meaning it could mean managing the resources of the business firm. But today, management has multiple dimensions. These multiple dimensions intervene at every level of management and every type of organization. In future, it is obvious that business and operations will become more complex and multi-tasking in nature and, is to be tactically challenged. So as to face such challenges, firms will have to use newer techniques and technologies. Developments such as 3G, 4G and 5G, Laser, Data Transmission, Banking Solutions, Lean Manufacturing, Interactive Communication and now Industry 4.0 are some of the outcomes of recent innovation efforts. Virtual control is one such technique which has gained prominence for effective and efficient management system. This research paper elucidates the nature and scope of virtual control, its structure, its operational set up, its suitability to business firms, the pros and cons of this technique and allied topics in this context.

**Index Terms**— Virtual Control, Emerging Trend in Management, New Techniques, Technologies, Innovations

## I. INTRODUCTION

Management is very broad concept. In the past, management meant managing a business firm, as an extended meaning it could mean managing the resources of the business firm. But today, management has multiple dimensions. These multiple dimensions intervene at every level of management and every type of organization. In future, it is obvious that business and operations will become more complex and multi-tasking in nature and, is to be tactically challenged. So as to face such challenges, firms will have to use newer techniques and technologies. Developments such as 3G, 4G and 5G, Laser, Data Transmission, Banking Solutions, Lean Manufacturing, Interactive Communication and now Industry 4.0 are some of the outcomes of recent innovation efforts. Virtual control is one such technique which has gained prominence for effective and efficient management system.

Whatever are the activities, one or more persons have to carry out the various tasks involved within it. Every firm has its goals to achieve. It is, therefore, necessary that strategic interventions are to be deployed so as to accomplish the set goals effectively, efficiently and economically. People who are responsible for initiating such interventions are known as 'managers', and their functions taken together may be called as 'management'.

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## II. MANAGEMENT – BACKGROUND NOTE

In simple words, management means managing a set of activities in a firm. When we talk about managing activities, we really mean to make such activities succeed. In other words, we have in mind some goal and we decide about the ways of carrying out those activities so as to achieve the goal.

### Contributors to Management Thought

The development of management thought is the result of contributions made by pioneering management thinkers and experts from other social sciences such as economics and psychology as well.

F.W. Taylor (1856-1915) is one of the founders of classical thought or classical theory of management. He suggested scientific approach to management also called scientific management theory. F. W. Taylor is rightly treated as the father of scientific management. He suggested the principles of scientific management. His concept of scientific management developed into a movement and dominated the industrial management for several decades. His concepts and principles were refined and popularized by several of his followers, notable among them being Henry Gantt, Gilberts and Emerson among others.

### Management Control Techniques

Traditionally, management control was achieved through direct supervision and observation, financial statements, budgetary control, break-even analysis, return on investment (ROI), management by objectives (MBO), management audit, management information system (MIS) - programme evaluation and review technique (PERT), critical path method (CPM) and similar others.

The application and outcome of these techniques do hold good even today, but then, innovations have also been facilitating effective control in the recent past. One such recent technique for management control is 'virtual control'. This involves a combination of technologies with a synergistic approach.

### Virtual Control – An Emerging Technology

Virtual control is about managing people from a distance using technologies. This control can reduce travel cost up to 50% with huge gains in terms of productivity and morale. Management through virtual control is a high risk strategy unless corporations are committed, and requires investment in technologies as well as sophisticated team trainings. Virtual Management means, maintaining a close working relationship with colleagues based at many locations, without the need for physical meetings as traditionally needed.

Teams which could bridge the distance gap will win a clear competitive advantage - travelling less but with greater impact

during each visit, backed up with regular videoconferencing, shared space technologies, chat, e-mail, telephone conference calls and other digital tools that could facilitate an interaction as spontaneously as a telephone call.

Virtual Management technology is vital to corporate growth. Virtual Control is a flexible enterprise management and control system that has been designed to support a wide range of distributed system needs. Virtual management could be effective, efficient and economic when there is a high degree of convergence among virtual teams, virtual people, new networking patterns, virtual technologies and the vision of the firm.

### III. NATURE AND SCOPE OF VIRTUAL MANAGEMENT TECHNOLOGIES

The nature and scope of Virtual Management includes managing the network of people, data, security and many more.

**Managing Networks:** Virtual Management technologies use a wide range of applications to manage the key operational components of complex firms. This is mainly because; firms are expanding geographically and are located across the world.

**Virtual Touch:** Virtual Management Technologies use remotes, to 'touch' servers and networks around the U.S. and the world. Using these advanced technologies does not just monitor the happenings, but proactively manage the activities in the firm's environment. This helps in minimizing costs and better time management.

**Digital Data Backup:** Offsite data storage is an industry best practice, this helps in capturing full and incremental data backups and keep them safely in multi-data center network. Lost data can be quickly recovered and returned to users. Incremental data changes are encrypted and streamed via the Internet to a secure data center. This technology helps in maintaining security, speed of data recovery, leading to maximize business continuity.

**Reaching Virtually:** Virtual Management technologies help in reaching to workers' at their desktop or shop floor. Such a reach enables firms, supervisors and workers to trouble shoot issues instantly and chalk our solutions at a faster pace.

**Dashboard - Panoramic Network View:** Workers in the firm have the facility to 'see' their entire network of teams at local premises or at multi-location using a powerful interactive dashboard. All the workers can view performance characteristics of the network in real time. This technology enables workers to know an immediate status of network components, the activities performed, accomplishments and etc...

**Active Directory Management:** Virtual management technology provides complete mapping across all networks of workers and all other resources to ensure secure authentication of data and information and authorization of resource utilization, and to derive the best out of the ploughed in resources.

**Network Security:** Providing firewall, application layer filtering, intrusion detection, web caching and many more to create a secure environment for the firm's virtual infrastructure and users. This helps in avoiding vulnerability of the firm and its workers to external threats.

### First involved virtual control

**Tele-presence:** Tele-presence refers to a set of technologies which allow a person to feel as if they were present, to give the appearance of being present, or to have an effect, via tele-robotics, at a place other than their true location. Tele-presence gives the users' a feeling of being in that other location.

Additionally, users may be given the ability to affect the remote location. In this case, the user's position, movements, actions, voice, etc. may be sensed, transmitted and duplicated in the remote location to bring about this effect. Therefore, information may be traveling in both directions between the user and the remote location.

Tele-presence via video deploys greater technical sophistication and improved output of both video audio than in traditional videoconferencing method. Technical advancements in mobile collaboration have also extended the capabilities of videoconferencing beyond the boardroom for use with hand-held mobile devices, enabling collaboration that is independent of location frameworks.

### IV. THE ADVANTAGE OF VIRTUAL CONTROL

Implementation of virtual control is advantageous to both the firm and the workers. The following are some of the remarkable benefits:

- A relaxing work environment
- More part time workers could be engaged
- Releases the stress on employees
- Avoids environmental pollution
- Minimizes travelling of workers
- Saves time and energy of workers
- Effective time management
- Space and infrastructure are not constraints

### CONCLUSION

Virtual control is a control strategy implemented through virtual management techniques. These techniques involve technologies which are time saving, cost effective, convenient and effective to manage wider span of control. As this concept of virtual control is technology driven, it speeds up every activity in a firm. In future, there is ample scope for the implementation of virtual control techniques because, operational tasks will be more complicated, geographical spread of business groups will also spread wide due to market forces. Emerging competency requirements are also technology based. Therefore, it could be concluded that virtual control will be an advantage to firms for achieving effective and efficient management control.

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