

Standardized Approach for Effective Management of Workforce Capacity

Randy R Costales Mejias
 Program of Engineering Management
 Prof. Hector Cruzado, PhD, PE
 School of Management and Entrepreneurship
 Polytechnic University of Puerto Rico

Abstract

Poor delegation management typically results in rework and quality issues that drive the high labor cost of any industry. The main cause of this problem is that management does not count with a standardized approach to assess their workforce capacity effectively. As part of this research, a standardized approach and a decision-making tool are developed in an effort to reduce uncertainty when delegating a particular task. The study shows that by creating a standardize approach, managers are capable to delegate task effectively, potentially reducing labor cost and improving productivity. The study also demonstrated that managers would be more effective when using decision-making tools that provide better planning and help them in identifying strengths and areas of improvements of their employees.

Introduction

The success of any athlete, musician or artist lies on the skills they possess and the capacity each individual has to develop for a particular area of their profession. The same behavior can be observed in the workplace of any individual. Each employee in an organization has a unique set of skills and experiences that help them perform better than their peers in a particular task. For this reason, it is essential for managers to effectively assess workforce capacity and to master resource-allocation techniques. In this paper, the approach to effectively assess workforce capacity is investigated. Hypotheses were based on the belief that effective workforce assessment will result in productivity improvements and labor costs reduction. In addition, the methodology presented herein will help managers to identify areas of improvement to encourage employees to be competent and stay motivated.

Objectives

1. Identify at least three variables that affect the effective usage of workforce capacity in any industry.
2. Define a standard methodology capable to assess employee's ability to take and complete new tasks effectively.
3. Explain the pros and cons of implementing a standardized methodology for work delegation.

Methodology

As shown in Figure 1, the management method used for this investigation was the PDCA (plan-do-check-act) cycle. This method was essential to identify design flaws and improve the model by testing and controlling the variables used to develop the standardized methodology for effectively assess workforce capacity.

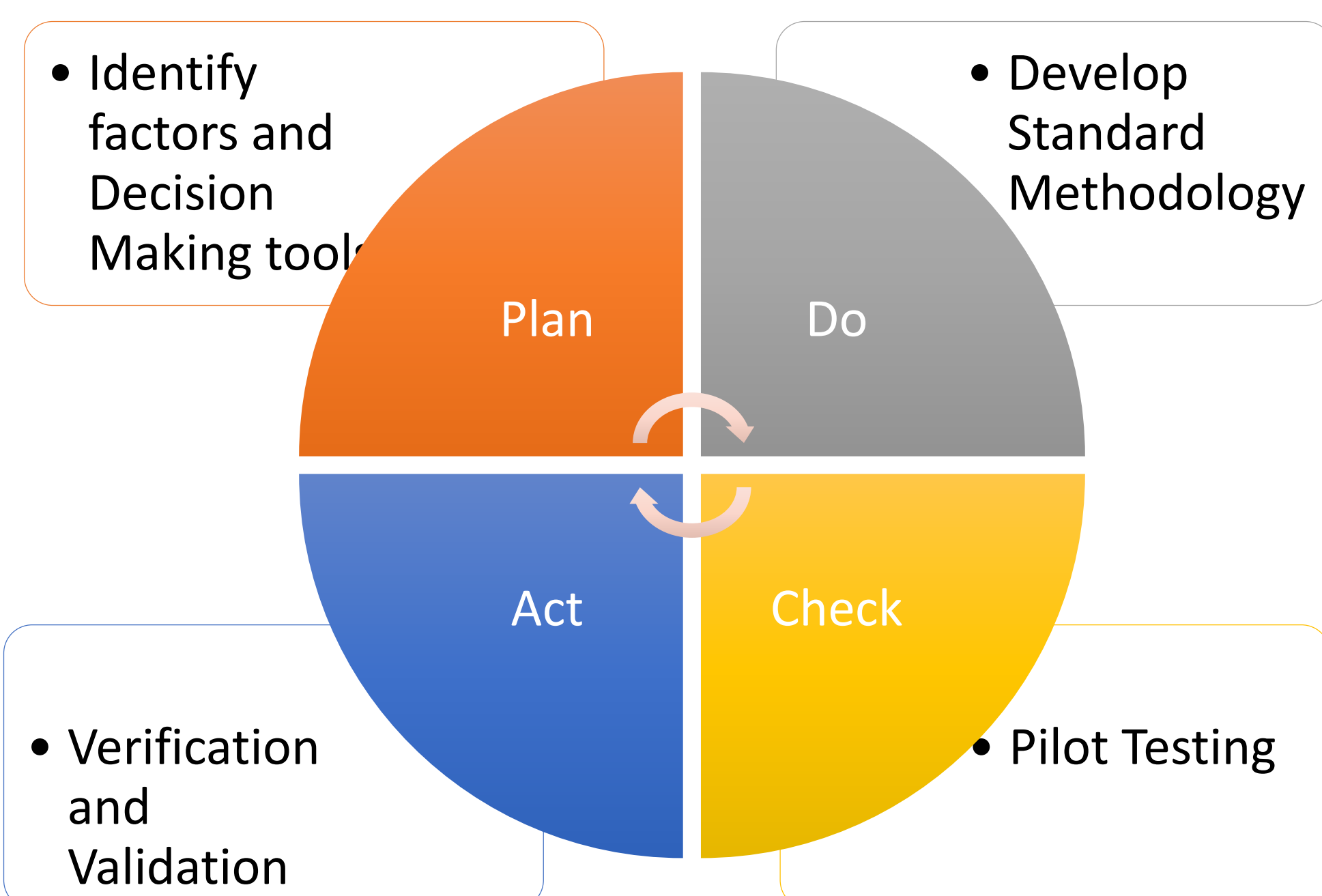


Figure 1
Plan-Do-Check-Act Cycle

Planning Phase

Standardized Methodology: During the planning phase, the variables shown in Figure 2 were identified as the key factors that managers need to delegate tasks effectively. These variables are:

1. **Skills:** Employees will be sorted in three different levels of expertise (beginner, average or expert). Managers will based the assignment of these levels of expertise according to the experience and tasks already accomplished by their employees.
2. **Work Load:** Managers will also have a workload matrix with the scheduled tasks for each individual on their unit. This information will be used to identify if the employee with the desired skills is available to execute the job in a given time frame.
3. **Labor Cost:** The labor cost will be used to ensure the tasks can be performed without exceeding the current budget.

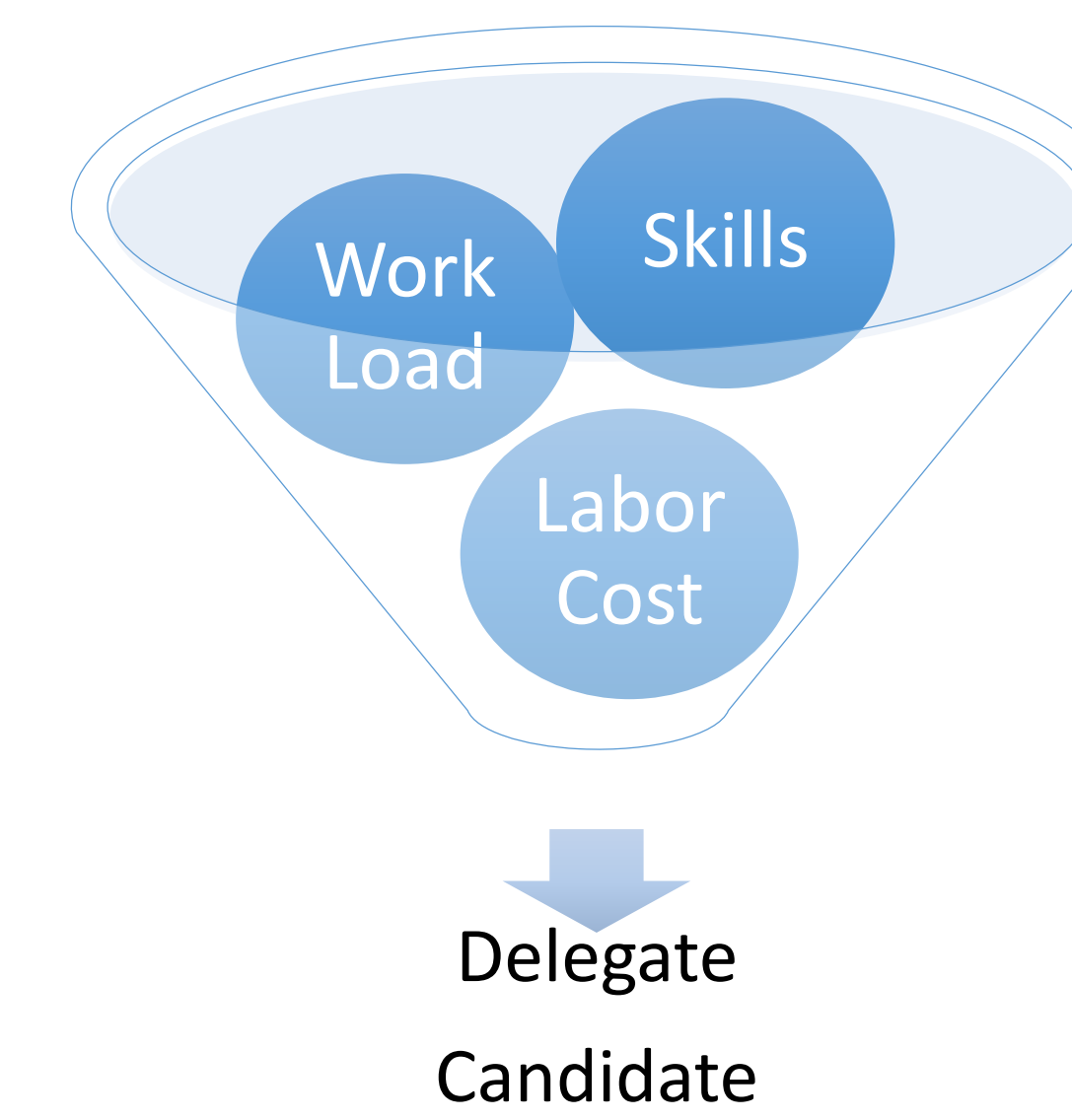


Figure 2
Variables for Effective Task Delegation

Development Phase

Decision Making Tool: During the development phase, an Excel spreadsheet was created to help managers in identifying the best candidate to delegate and complete a particular task effectively. Figure 3 presents the hypothetical data used in this study.

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Budget = \$6,000
 Week = 2

Work Load:

Employee	Work Load per Week				
	1	2	3	4	5
Juan	1	1	1	2	2
Fernando	3	1	1	3	3
Rosa	2	2	3	2	2
Maria	1	2	1	1	1
Pedro	2	1	3	3	1
Manuel	2	1	1	1	1
Jose	3	2	2	2	2
Ana	3	1	1	1	3
Luis	3	1	2	2	2
Patricia	2	2	1	1	1

Labor Cost:

Employee	Required Time per Task (hours)						Wage/hr
	Operational Procedure	Programming	Debugging	Graphics	Training	Project Management	
Juan	30	80	55	15	2	2	\$25
Fernando	26	96	58	16	1	1	\$32
Rosa	48	77	51	20	1	2	\$21
Maria	55	65	48	27	1	3	\$21
Pedro	39	72	43	16	2	1	\$36
Manuel	42	90	46	16	2	1	\$40
Jose	61	85	38	22	1	2	\$33
Ana	52	82	38	20	1	1	\$28
Luis	44	93	50	18	2	3	\$26
Patricia	36	63	47	28	1	3	\$36

Skills:

Employee	Level of expertise per Task (Beginner =1, Average = 2, Expert =3)					
	Operational Procedure	Programmin g	Debugging	Graphics	Training	Project Management
Juan	1	2	3	1	2	2
Fernando	1	2	3	2	1	1
Rosa	2	1	2	3	1	2
Maria	3	3	2	2	1	3
Pedro	1	3	2	1	2	1
Manuel	2	1	1	3	2	1
Jose	3	2	2	1	1	2
Ana	3	1	3	2	1	1
Luis	1	1	1	2	2	3
Patricia	2	3	2	1	1	3

Employee	Labor Cost (\$/task)					
	Operational Procedure	Programming	Debugging	Graphics	Training	Project Management
Juan	\$750	\$2,000	\$1,375	\$375	\$50	\$50
Fernando	\$832	\$3,072	\$1,856	\$512	\$32	\$32
Rosa	\$1,008	\$1,617	\$1,071	\$420	\$21	\$42
Maria	\$1,155	\$1,365	\$1,008	\$567	\$21	\$63
Pedro	\$1,404	\$2,592	\$1,548	\$576	\$72	\$36
Manuel	\$1,680	\$3,600	\$1,840	\$640	\$80	\$40
Jose	\$2,013	\$2,805	\$1,254	\$726	\$33	\$66
Ana	\$1,456	\$2,296	\$1,064	\$560	\$28	\$28
Luis	\$1,144	\$2,418	\$1,300	\$468	\$52	\$78
Patricia	\$1,296	\$2,268	\$1,692	\$1,008	\$36	\$108

Figure 3
Spreadsheet Inputs

Results

Figure 4 presents the final results of the spreadsheet model after the Excel Solver add-in was executed.

Task Delegation:

Employee	Task delegated to:						Maximum Tasks per Week
	Operational Procedure	Programming	Debugging	Graphics	Training	Project Management	
Juan	0	0	0	0	0	0	3
Fernando	0	0	0	0	0	0	3
Rosa	0	1	0	0	0	0	3
Maria	1	0	0	0	0	0	3
Pedro	0	0	0	0	0	0	3
Manuel	0	0	0	1	0	0	3
Jose	0	0	0	0	0	0	3
Ana	0	0	0	0	1	0	3
Luis	0	0	1	0	0	1	3
Patricia	0	0	0	0	0	0	3
Total Delegated =	1	1	1	1	1	1	
Task =	1	1	1	1	1	1	
Total Expertise =	3	1	1	3	1	3	
Expertise Needed=	3	1	1	3	1	3	

Figure 4
Spreadsheet Output

Strengths and Weaknesses

Strength: The standardized approach provides an excellent platform that will help managers to effectively assess the workforce capacity and reduce labor cost of the firm. The spreadsheet platform will also provide with a dashboard were managers will be able to see strengths and areas of improvement of the employees.

Weakness: Hypotheses could not be fully verified because the method and tool presented herein were not tested with real work data. Moreover, the variables used to develop the standard methodology may not be sufficient to effectively assess workforce capacity for a particular industry. Additionally, during the verification and validation phase, the spreadsheet model was not able to present results with an exact solution at all times due to the boundary conditions and constraints stated in the Solver's window.

Conclusion

Although this study was not performed using real work data, the results presented herein provided enough evidence to conclude that effective workforce capacity is essential to successfully improve productivity, and reduced labor costs of a firm. In addition, the study presented mitigation actions such as the implementation of a dashboard to assess workforce capacity when the decision making tool is not capable to find an exact solution. This would also help managers to determine areas of improvement of their employees to assigned them challenging tasks that help them to be successful and motivated to work.