The Journal of CESNUR

Design and Application of Activity Value Management (AVM): The Case of Taiwan Soka Association

Anne Wu
National Chengchi University, Taipei, Taiwan
anwu@nccu.edu.tw

ABSTRACT: This study explores the essence and major theoretical innovations of Activity Value Management (AVM), which aims to assist organizations in effectively utilizing their resources. In the first part, it presents AVM essence and main theoretical innovations. In the second part, it discusses the application of AVM to Taiwan Soka Gakkai, Taiwan's affiliate of Soka Gakkai International. In the third part, it shows how AVM may assist managerial decision-making in the case of a non-profit organization. Finally, it lists different benefits the use of AVM may offer to non-profit organizations such as Taiwan Soka Gakkai.

KEYWORDS: Soka Gakkai, Taiwan Soka Gakkai, SGI, Activity Value Management, AVM.

Introduction

Through thirty-three years of integrating academic research, teaching, and practical application, I have built up the management accounting technique called Activity Value Management (AVM), which includes seven theoretical innovations to create value for organizations (Wu 2022).

AVM can be applied in the manufacturing, service, and healthcare industries, and even in the non-profit sector. The study examines the design and application of the AVM system in seventeen service centers of the Business Management Department of Taiwan Soka Association (Wu 2021).

First, the paper presents AVM essence and seven theoretical innovations. Second, it discusses five steps of AVM design for Taiwan Soka Association. Third, it provides AVM information for product and customer decision-making. Finally, it concludes with seven benefits of AVM for non-profit organizations.

The Journal of CESNUR, Volume 7, Issue 5, September–October 2023, pages 49–65.

ISSN: 2532-2990 | www.cesnur.net | DOI: 10.26338/tjoc.2023.7.5.4

AVM design involves the following five steps:

-Step 1: Design of the key management issues and value objects

It determines the relationship between management issues and value objects and accordingly forms an AVM checkboard chart.

-Step 2: Design for the resource module

It consists of products that are value objects, including books, clothing, Buddhist altars, Buddhist supplies, and so on, and customer categories, such as domestic customers or foreign customers.

-Step 3: Design for the activity center module

It identifies the first stage of activity performed by activity executors, who are mostly employees, such as employee product development, procurement activity, logistics activity, sales activity, and others.

-Step 4: Design for the activity module

It identifies the last stage of activity performed by employees, such as processing an order under the first stage of activity in sales. AVM collects the actual time (actual capacity) spent on each activity and calculates the actual costs. The most important feature of the activity module is that it consists of five major activity attributes: quality, capacity, value-added, customer service, and Environment, Social, and Governance (ESG). Because of activity attributes, cost management can integrate with quality management (recognizing the costs of internal failure and external failure), capacity management (recognizing productive or non-productive capacity), value-added management (recognizing value-added or non-value-added costs), customer service management (recognizing the costs for customer acquisition and after-sales services), and even ESG (recognizing the costs spent on environment, society, and governance).

-Step 5: Design for the value object module

Through the design of the activity driver, the costs and profits of products, such as Buddhist altars, Buddhist supplies, and so on, and of customers, such as domestic customers or foreign customers, can be calculated.

AVM can generate information on value, cost, and profit from the product perspective. The information from the product perspective can help managers' decision-making on product management.

AVM can also generate information on value, cost, and profit from the customers' perspective. The information from this perspective can assist managers' decision-making of customer management.

Taken altogether, AVM is able to provide positive impacts and benefits to non-profit organizations, including in effectively utilizing resources, reducing internal and external failure costs, elevating employees' capacity utilization, and improving the accuracy and relevance of management decision-making on products and customers.

Essence and Innovation of AVM

AVM is composed of four major modules.

1) Resource Module assigns resources to activity centers in order to understand the cost consumed by activity centers.

2) Activity Center Module identifies the first or second stage of activities under each activity center and calculates their standard cost.

3) Activity Module decomposes the first or second stage of activities into the last stage of activities and calculates their actual cost.

4) Value Object Module calculates the cost, profit, and even value of the value objects, which can be products, customers, projects, and others.

AVM integrates "cause" and "outcome" information together and provides relevant information for management decision-making. Module 1 of AVM includes "outcome" information concerning "how much expenses per month." Module 2 includes "cause" information related to "which department or executor spends the expenses." Module 3 collects "cause" information concerning "which activity or what activity the executor actually does." Module 4 includes "outcome" information related to "what activity contributes to value object" and "how much profit and value are created." The essence of AVM appears in Figure 1.

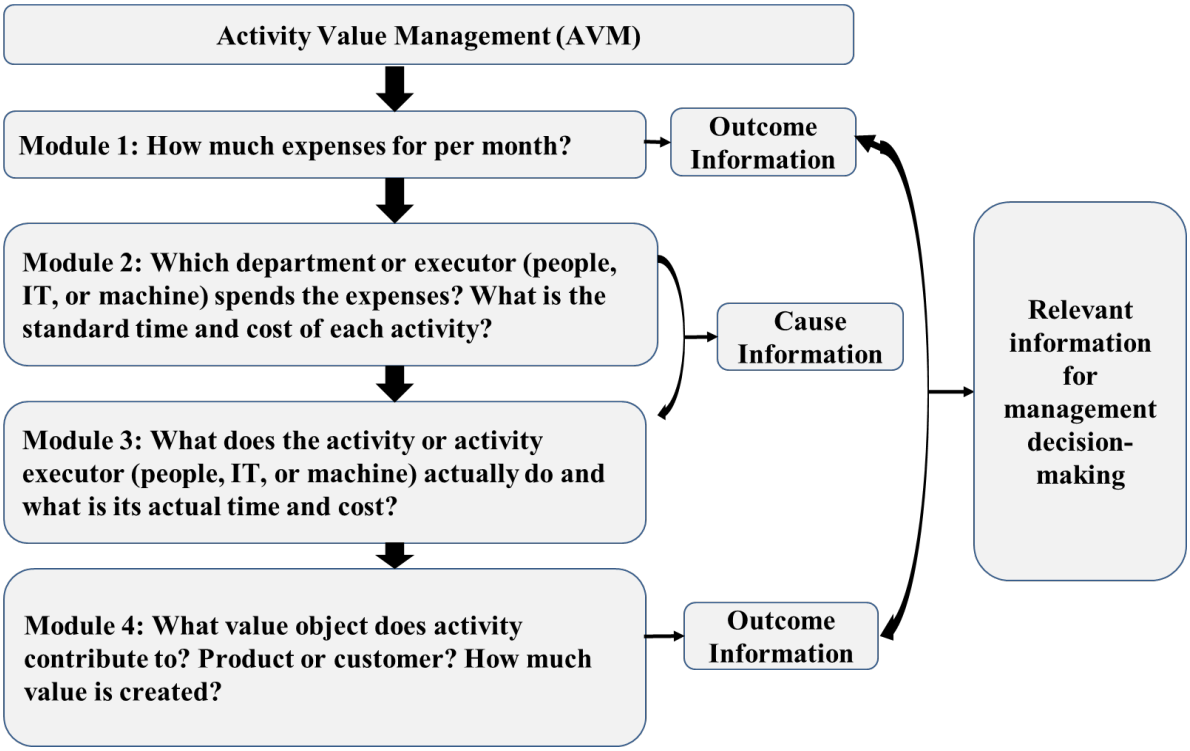

Figure 1. The essence of AVM.

AVM includes seven theoretical innovations as follows.

1. Innovation 1: The strategy guiding the design of AVM.

2. Innovation 2: The analyses of controllable and uncontrollable costs—Module 1.

3. Innovation 3: The analyses of overused or unused capacity of an activity—Modules 2 and 3.

4. Innovation 4: Five major activity attributes: quality, capacity, value-added, customer service, and ESG.

5. Innovation 5: The analyses of overall value chain costs of the enterprise—Module 4.

6. Innovation 6: The analyses of hidden costs, capital costs, and risk costs of value objects—Module 4.

7. Innovation 7: Integrated management decision-making information—Module 4.

Because of those seven innovations, AVM offers seven management values (see Figure 2).

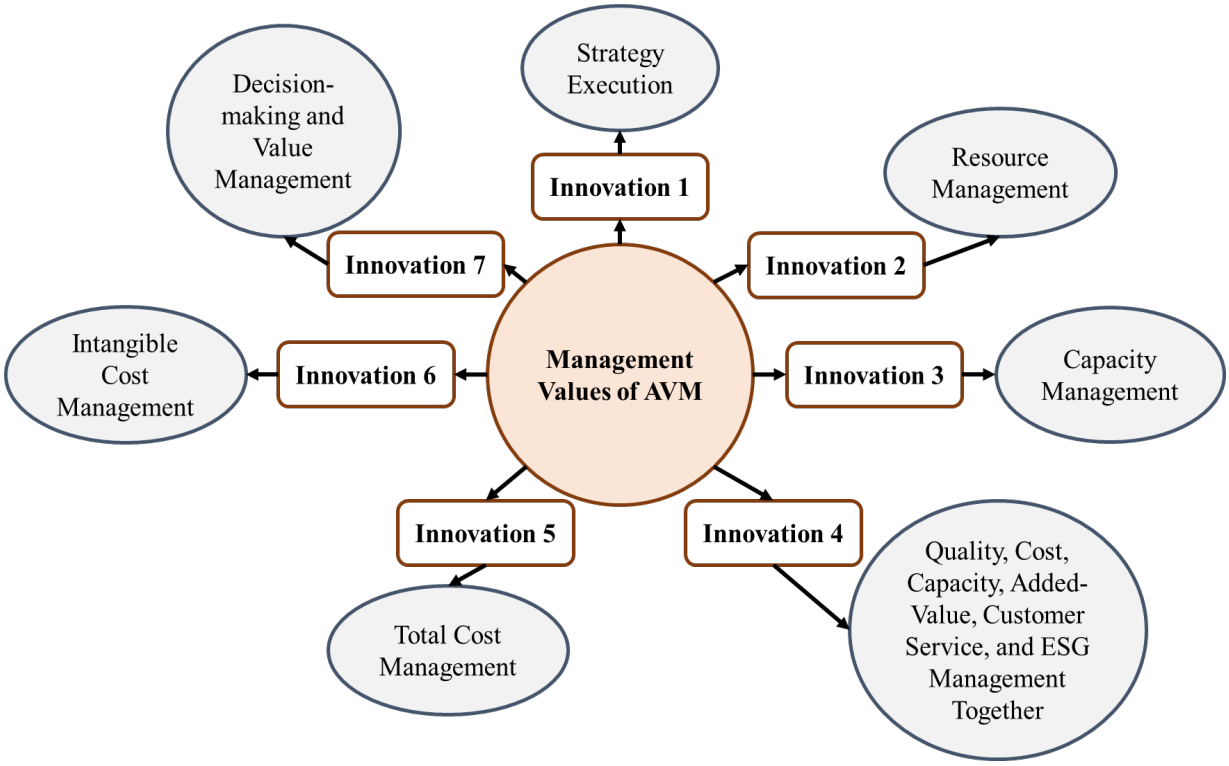

Figure 2. Seven management values of AVM.

Design of AVM: The Case of Taiwan Soka Association

We applied the five steps for designing AVM presented in the Introduction above to the case of Taiwan Soka Association.

-Step 1: Design the relationship between management issues and value objects

To understand the relationship between management issues and value objects, we use a checkboard chart (Figure 3).

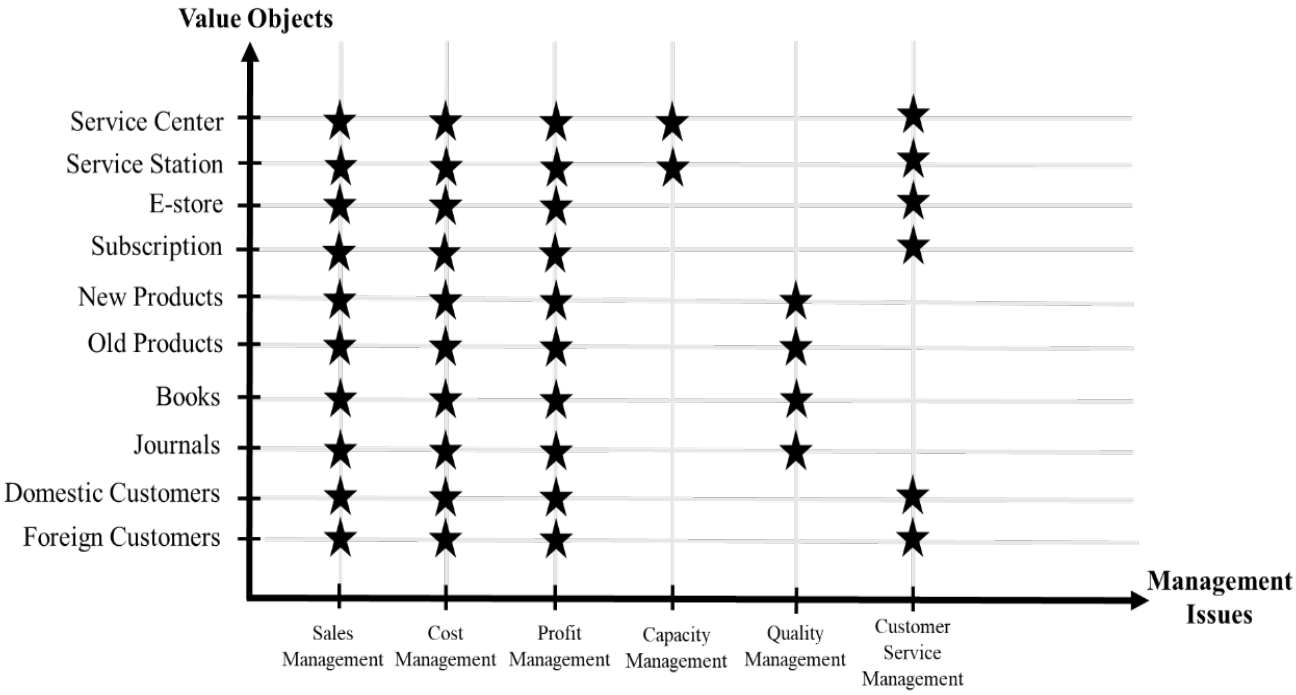

Figure 3. Management issues and value objects.

In Figure 3, there are six management issues such as cost management, capacity management, and so on, and ten value objects covering service center, foreign customers, and others. Based on Figure 3, we understand that sales management, cost management, and profit management are important for the service center.

-Step 2: Design the resource module

There are two significant sub-steps for designing the resource module. Step 2-1 is the design for value objects, which are products and customers as in Figure 4.

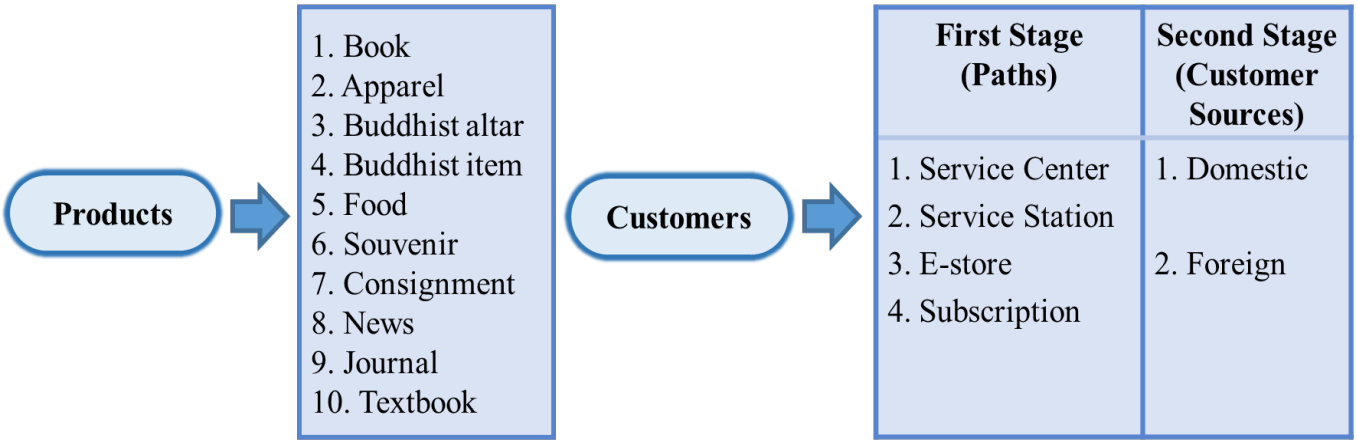

Figure 4. The design for value objects.

Based on Figure 4, we know that each product can be classified as "book," "Buddhist altar," and so on, and customers include domestic and foreign customers. Step 2-2 is the design for the activity center to understand the organizational structure, as in Figure 5.

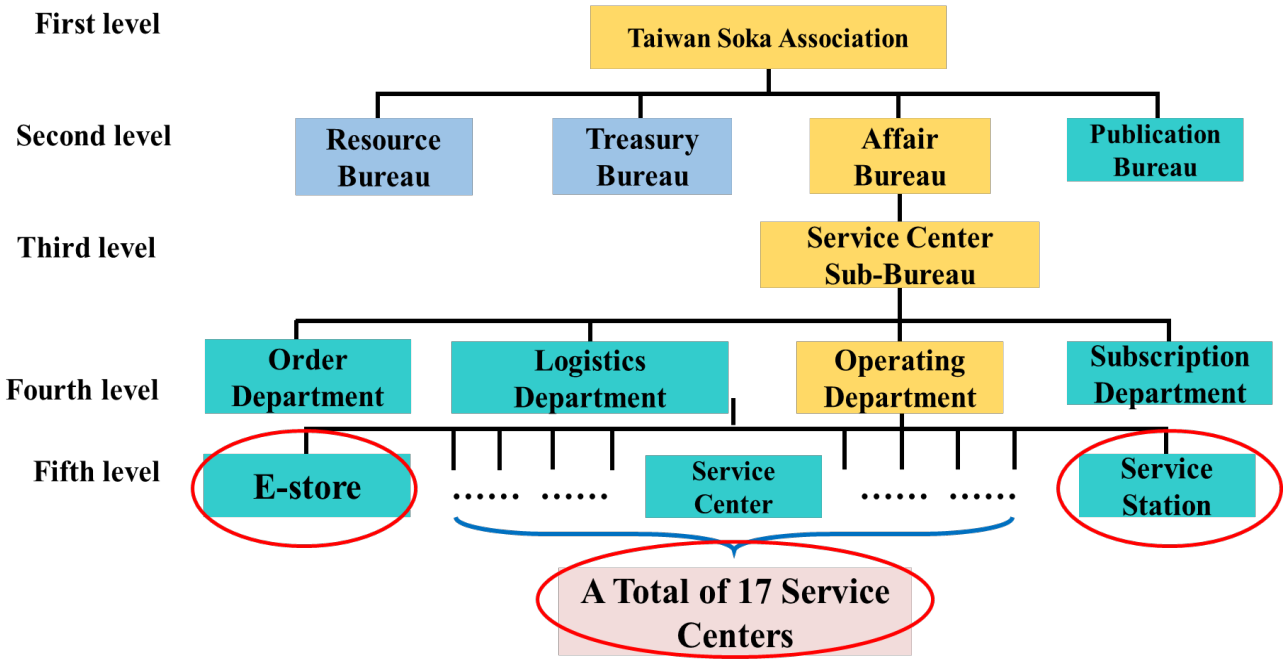

Figure 5. The design for the activity center.

Based on Figure 5, there are five levels of the organization. We designed AVM for seventeen service centers, which are the fifth level in the organization. In module 1, AVM can calculate controllable or uncontrollable resources used by seventeen service centers as in Table 1.

Resource Items	1. Zhi Shan Service Center		2. Jin Zhou Service Center		3. Ban Qiao Service Center	
	Amount	Proportion	Amount	Proportion	Amount	Proportion
Resource used by Activity Center	14,232.377	93.55%	30,408.477	96.45%	13,754.277	95.16 %
Resource used by Value Object	0	0.00%	0	0.00%	0	0.00%
Controllable Resources	**14,232.377**	**93.55%**	**30,408.477**	**96.45%**	**13,754.277**	**95.16%**
Allocative from M.A.C.	561.523	3.69%	280.761	0.89%	280.761	1.94%
Allocative from S.A.C.	419.423	2.76%	838.846	2.66%	419.423	2.90%
Uncontrollable Resources	**980.946**	**6.45%**	**1,119.607**	**3.55%**	**700.184**	**4.84%**
Total	**15,213.323**	**100%**	**31,528.084**	**100%**	**14,454.461**	**100%**

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Table 1. Controllable and uncontrollable resources of service centers: three examples.

In Table 1, we notice that uncontrollable resources are very small (less than 7%) in the three service centers selected as examples. AVM can also calculate the profit for each service center. Table 2 shows the profit and profit ratio for these three service centers.

Activity Center	Revenue from Activity Center's Customer	Total Cost from Activity Center's Customer	Profit from Activity Center's Customer	Profit Ratio from Activity Center's Customer
1. Zhi Shan Service Center	1,743.4	1,499.22	244.18	14%
2. Jin Zhou Service Center	9,852.48	7,277.06	2,575.42	26.14%
3. Ban Qiao Service Center	2,842.6	2,240.88	601.72	21.17%

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Table 2. Profit and profit ratio of each service center: three examples.

Based on Table 2, we understand that the three service centers have positive profits and profit ratios ranging from 14% to 26.14%.

-Step 3: Design the activity center module

These are three key sub-steps in the activity center module. Step 3-1 is the design of the first stage of activity. Table 3 shows the first stage of employees' activities for service centers.

First Stage of Activity	Activity Executor (Employee)
Product Development	Service Center Bureau
Purchase	Service Center Bureau
Logistics	Logistics Place/Operating Place
Tallying	Service Center/Service Station/Logistics Place
Shelves	Service Center/Service Station/Logistics Place
Sales	Subscription Place/Operating Place/Service Center
Shipment	Logistics Place/Operating Place/Service Center
Daily Work	Service Center/Service Station/Logistics Place
Abnormal Product Handling	Service Center/Service Station/Logistics Place/Operating Place
Publication of Journal	Publication GA
Publication of News	Publication GA
Book Project	Publication GA
Publication of Textbook	Publication GA

Table 3. The first stage of employees' activities.

Step 3-2 is the design of the activity center driver. This step sets up the normal capacity (expected working hours) of the activity. Table 4 shows the standard time (minutes) for the first stage of employees' activities in one month.

First Stage of Activity	Standard Time (Minutes)
Logistics	6,209
Tallying	19,699
Shelves	25,785
Sales	119,721
Shipment	64,068
Daily Work	61,184
Abnormal Product Handling	5,941
Publication of Journal	16,089
Publication of News	59,407
Publication of Textbook	43,318

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Table 4. Standard time for the first stage of employees' activities.

Step 3-3 calculates the standard cost for the first stage of activity. Table 5 presents the standard cost situation of the first stage of activity.

First Stage of Activity	Standard Time (Minutes)	Standard Cost (Minutes)	Standard Cost Per Minute
Logistics	6,209	65,840	10.60
Tallying	19,699	158,100	8.03
Shelves	25,785	320,648	12.44
Sales	119,721	1,088,472	9.09
Shipment	64,068	532,574	8.31
Daily Work	61,184	657,741	10.75
Abnormal Product Handling	5,941	32,288	5.43
Publication of Journal	16,089	269,370	16.74
Publication of News	59,407	994,623	16.74
Publication of Textbook	43,318	725,252	16.74

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Table 5. Standard cost for the first stage of activity.

Based on Table 5, we know that journal, news, and textbook publications have the highest standard cost per minute of NT$16.74.

-Step 4: Design the activity module

There are four key sub-steps in the activity module. Step 4-1 is the design of the last stage of activity. Table 6 is an example of the last stage of sale activity.

First Stage of Activity	Last Stage Of Activity
Sales	Order Processing
Sales	Place an Order
Sales	Customer Reception, Consultation, and Sales
Sales	Complain _ Not Received Product
Sales	Complain _ Subscription System Relative
Sales	Complain _ Product Quality
Sales	Complain _ Other
Sales	Crisis Management _ Alleviation and Encourage
Sales	Crisis Management _ Help with Inquiries to Subscription Place
Sales	Crisis Management _ Explain and Return
Sales	E-ship Marketing
Sales	Marketing
Sales	Create Customer Profile

Table 6. Last stage of sales activity.

Step 4-2 is the design of the activity center driver. We use the AVM Timer to collect each employee's actual work time in every last stage of activity. Step 4-3 determines overused capacity or unused capacity and the related cost. Step 4-4 is the design of activity attributes. Table 7 lists the four activity attributes for the sales function.

First Stage Activity	Last Stage Activity	1. Quality Attribute	2. Capacity Attribute	3. Value-added Attribute	4. Customer Service Attribute
Sales	Order Processing		Productive	Value-added	Providing
Sales	Place an Order		Productive	Value-added	Providing
Sales	Customer Reception, Consultation, and Sales		Productive	Value-added	Providing
Sales	Complain _ Not Received Product	External Failure	Non-productive	Non-value-added	Sustaining
Sales	Complain _ Subscription System Relative	External Failure	Non-productive	Non-value-added	Sustaining
Sales	Complain _ Product Quality	External Failure	Non-productive	Non-value-added	Sustaining
Sales	Complain _ Other	External Failure	Non-productive	Non-value-added	Sustaining
Sales	Crisis Management _ Alleviation and Encourage	External Failure	Non-productive	Non-value-added	Sustaining
Sales	Crisis Management _ Help with Inquiries to Subscription Place	External Failure	Non-productive	Non-value-added	Sustaining
Sales	Crisis Management _ Explain and Return	External Failure	Non-productive	Non-value-added	Sustaining
Sales	E-ship Marketing		Productive	Value-added	Acquiring
Sales	Marketing		Productive	Value-added	Acquiring
Sales	Create Customer Profile		Productive	Value-added	Acquiring

Table 7. Activity attributes for the sales function.

-Step 5: Design the value object module

There are two key sub-steps in the value object module. Step 5-1 is the design of activity driver. Table 8 shows the activity driver for sales activity.

Last Stage of Sale Activity	Activity Driver
Order Processing	Quantity of Order
Place an Order	Quantity of Order
Customer Reception, Consultation, and Sales	Quantity of Reception
Complain _ Not Received Product	Quantity of Customer Complain
Complain _ Subscription System Relative	Quantity of Customer Complain
Complain _ Product Quality	Quantity of Customer Complain
Complain _ Other	Quantity of Customer Complain
Crisis Management _ Alleviation and Encourage	Time of Handling
Crisis Management _ Help with Inquiries to Subscription Place	Time of Handling
Crisis Management _ Explain and Return	Time of Handling
E-ship Marketing	Time of Activity
Marketing	Time of Activity
Create Customer Profile	Quantity of Customer

Table 8. Activity driver of sales activity.

Step 5-2 calculates the cost and profit for value objects, which include product and customer service.

Product and Customer Management Decision-Making: The Case of Taiwan Soka Association

AVM can integrate "cause" and "outcome" information together and provide such information for managers' decision-making. In general, the most significant management decisions are product and customer management decision-making.

-Product management decision-making

Based on the information of the product value chain cost and profit, we can understand the situation of product total cost and profit as in Table 9.

Product Code	Product Name	Product Quantity	Product Revenue	Product Value-chain Cost								Product Total Cost		Profit Amount	Profit Ratio
				R&D Cost		Design Cost		Manufacture Cost		Management Cost					
				Amount	Proportion	Amount	Proportion	Amount	Proportion	Amount	Proportion	Amount	Proportion		
P01	Book	1,565.1	603,631.1	0	0%	0	0%	121,134.3	79.43%	31,362.2	20.57%	152,496.5	25%	45,113.46	75%
P04	Buddhist Item	646.6	225,013.9	0	0%	0	0%	67,183.2	51.86%	62,361.1	48.14%	129,544.3	58%	95,469.6	42%
P08	News	17,530	188,973.9	0	0%	0	0%	99,292.1	100.00%	0	0.00%	99,292.1	53%	89,681.8	47%
P03	Buddhist Altar	7.4	157,186.5	0	0%	0	0%	72,431.8	89.77%	8,250.3	10.23%	80,682.1	51%	76,504.4	49%
P10	Textbook	1,000.1	69,566.8	0	0%	0	0%	34,763.8	99.80%	69.2	0.20%	34,833	50%	34,733.8	50%
P09	Journal	704.5	51,520.3	0	0%	0	0%	35,830.5	99.81%	69.2	0.19%	35,899.7	70%	15,620.6	30%
P06	Souvenir	801.1	48,629.4	0	0%	0	0%	13,115.9	70.84%	5,399.8	29.16%	18,515.7	38%	30,113.7	62%
P05	Food	203.7	23,513.8	0	0%	0	0%	13,769.7	26.33%	38,517.4	73.67%	52,287.1	222%	-28,773.3	-122%

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Table 9. Product value chain cost and profit analysis.

From Table 9, we know that P05, food, has the highest losses at minus NT$28,773.3. Based on the AVM decision-making system, we can understand why P05, food, has losses.

Figure 6 shows the situation of value chain cost ratio for product P05, food.

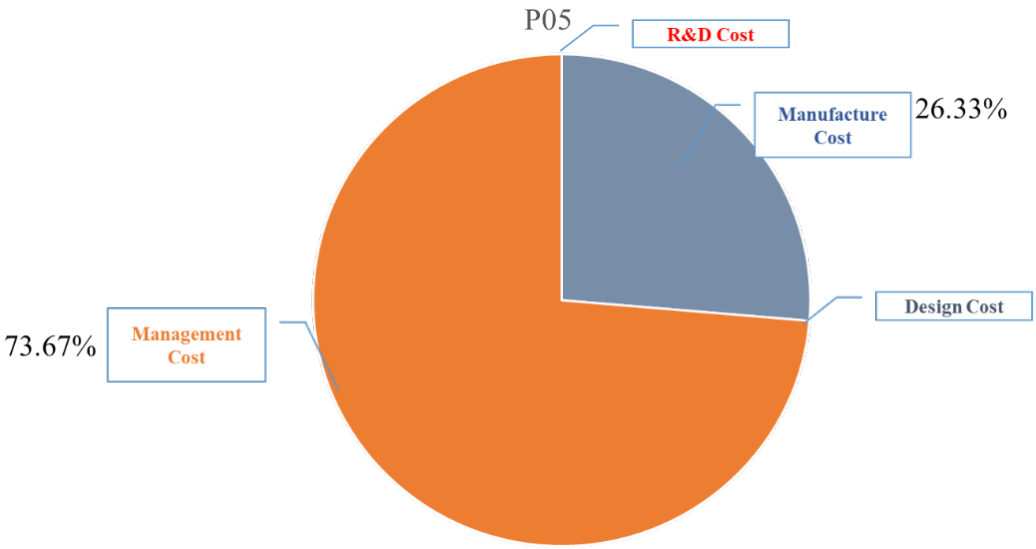

Figure 6. Value-chain cost ratio of product analysis: P05, food.

From Figure 6, P05 (food) has the highest management cost ratio of 73.67%. Based on Figure 7, P05 has the highest cost ratio in "purchase activity" at 39.66%. In addition, P05 has the highest cost ratio for the "purchase order sub-activity" at 62.16%.

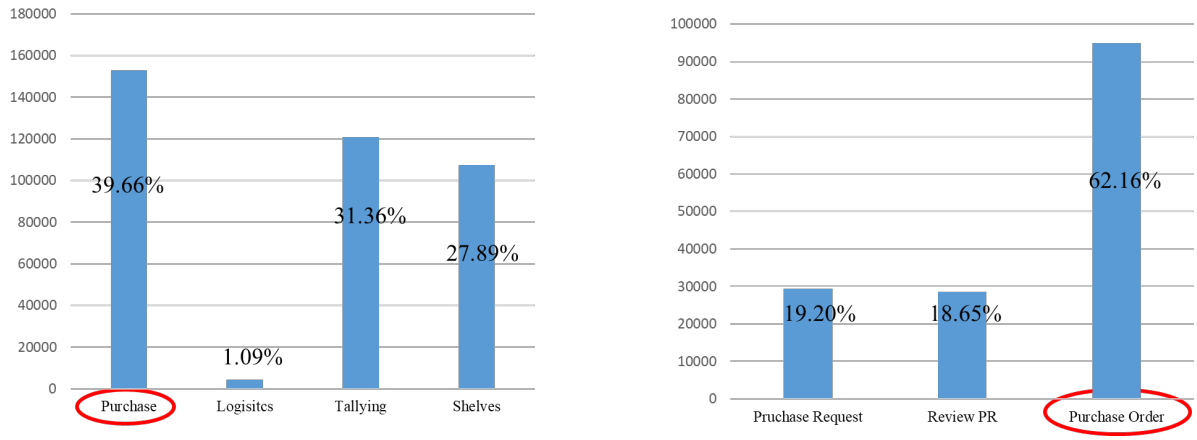

Figure 7. Value-chain cost of product activity analysis: P05, food.

-Customer management decision-making

Based on the information on profits for customer analysis, we can now understand the situation better. Table 10 shows the situation of the "E-Store Channel."

Product Code and Name	Quantity	Revenue	Product Cost		General Service Cost		Customized Service Cost		Total Cost		Customer Profit	Customer Profit Ratio
			Amount	Pro-portion	Amount	Pro-portion	Amount	Pro-portion	Amount	Pro-portion		
P01:Book	103	2,136.5	797.191	3.63%	20,984.183	95.44%	0.00	0.00%	21,781.374	100%	-19,644.874	-9.29%
P04: Buddhist Item	70	1,811.7	727.316	11.01%	5,201.47	78.76%	0.00	0.00%	5,928.786	100%	-4,117.086	-2.65%
P06: Souvenir	230	1,217.8	376.564	12.02%	2,600.735	83.03%	0.00	0.00%	2,977.299	100%	-1,759.499	-1.57%
P05:Food	1	168	6.76	0.07%	9,102.572	99.72%	0.00	0.00%	9,109.332	100%	-8,941.332	-53.33%
Total											-34,462.791	

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Table 10. Profits for customer analysis: E-Store Channel.

Based on Table 10, we know that the E-Store Channel has losses at a total of minus NT$34,462.791. Figure 8 shows that the E-Store Channel has the highest general service cost ratio of 92.75%.

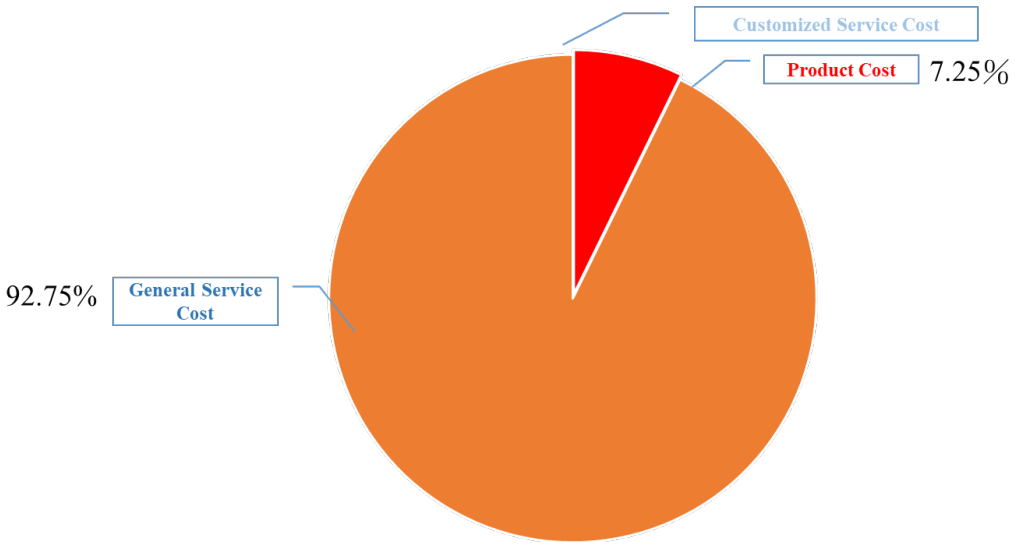

Figure 8. Cost ratio situation of customer analysis—E-Store Channel.

Figure 9 shows that the E-Store Channel has the highest "sales activity" cost ratio at 83.77%. The main cost ratio of sales activity is the "order processing activity" at 99.44%.

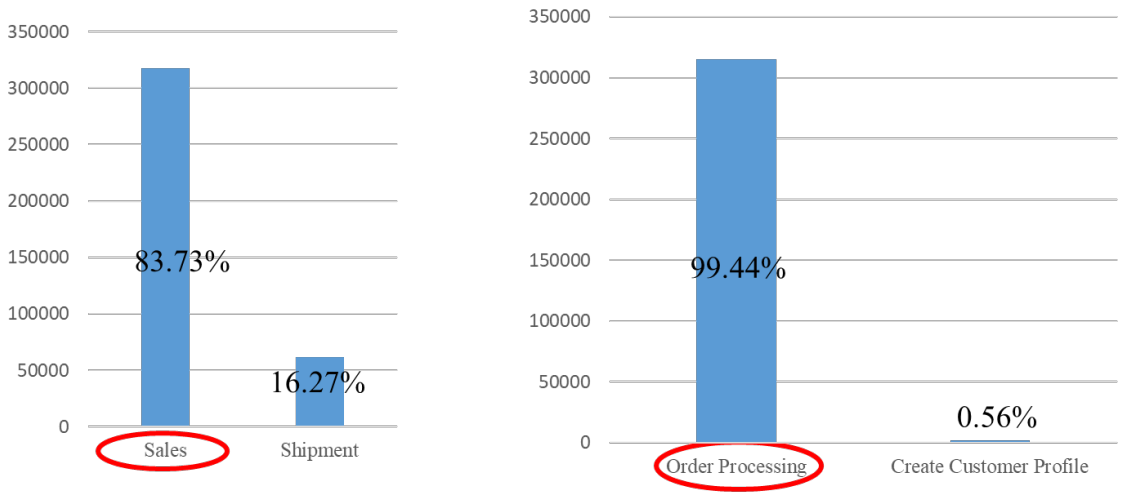

Figure 9. Activity cost of customer analysis—E-Store Channel.

Conclusion

AVM provides "cause" and "outcome" information for managers to make relevant decision-making. Therefore, AVM can create benefits for non-profit organizations. We conclude that those benefits are as follows:

1. Effective use of resources to spend on value-added activity.

2. Effective use of employees' capacity to create value for a non-profit organization.

3. Increase employees' productivity to decrease internal and external failure costs.

4. Integrate cost, quality, capacity, added-value, customer service, and ESG management together to upgrade management values.

5. Understand intangible values that contribute benefits for society and stakeholders.

6. Help different levels of managers make relevant decision-making and understand the reasons for the non-productive activity of employees.

7. Achieve the goal of sustainability for non-profit organizations. AVM and ESG integrate together based on activity attributes, and so non-profit organizations can understand which activity is good for ESG and sustainable development.

All in all, based on AVM design and application to Taiwan Soka Association, we validate AVM as being suitable for managers' decision-making and for future AI development in non-profit organizations.

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