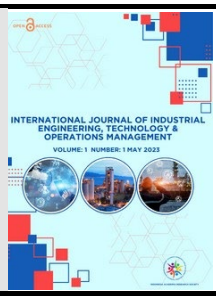
e-ISSN: 3031-6391
p-ISSN: 3026-0140

Content lists available at Indonesia Academia Research Society

International Journal of Industrial Engineering, Technology & Operations Management

Journal homepage: ejournals.indoacademia-society.com



Review Article

Check for updates

Conceptualizing the ICEBERG Problem-Solving Tool: A Case Study of An Authorized Automobile Dealer in Riyadh, Saudi Arabia

Hussein A. Al-Homery [a], Hasbullah Ashari [a] and Asmala Ahmad [a,*]

[a] Faculty of Manufacturing Engineering, Universiti Teknikal Malaysia Melaka, Hang Tuah Jaya, 76100 Durian Tunggal, Melaka, Malaysia.

* Correspondence: asmala@utem.edu.my

Article History
Received: 2 March 2023
Revised: 24 May 2023
Accepted: 2 June 2023
Available: Online 30 June 2023

Keywords:
System thinking
ICEBERG model
Problem-solving tool "IPST"
Automotive retail sales process
Cross-functional process

Abstract

This study offers the practical part of our academic, conceptual paper on the ICEBERG Problem Solving Tool (IPST) within the application of a case study for an authorized automobile dealer in Riyadh, Saudi Arabia. The research is designed to represent how to operationalize the ICEBERG model practically in business problem-solving by using the concept of the IPST. The research is a qualitative case study within action research. It is a three cycles of action research. The tool application identified five levels of analysis besides the cross-functional analysis, the root cause of the persistent operational events and clearly showed the leverage points in the whole sales retail system. The "IPST" five levels of analysis enable us to see the complete picture of the cause of the events, touching the leverage points for decision-makers or the organizers. It is a quick fix for pining issues of repeated business events for the dealer's high performance. With theoretical roots in system thinking, this paper contributes to applying the ICEBERG model through "IPST" as a practical problem-solving tool for the business complex environment, has puzzles (operational killing events) around the whole business process and needs to be solved for a better performance.

1. Introduction

Complexity characterizes business endeavors today (Basole & Rouse, 2008; Hoe et al., 2017). The surrounding challenges facing the business today are complex, involving decision-makers, policymakers, and various other stakeholders. Such complexity and challenges of the problems cannot be addressed and solved in isolation from other participatory parts. Therefore, collaborative, systemic, and integrated approaches are vital for viable results (D'amour et al., 2005; El Ansari et al., 2001). It has become significantly imperative for decision-makers and managers involved in the management of any system to be furnished with the required competencies and skills to make good policy and management decisions. Most of the time, the business environment's prominent key barriers are the lack of common understanding and shared vision of how to address the complex issues facing the business (Kaplan et al., 2001; Riege, 2005).

The lack of cross-functional process collaboration leads to fragmented decision-making and uncoordinated actions. This is further exacerbated by cross-purpose negotiations, the wasting of business natural resources, and a loss of confidence in leadership and governance. Over time, these all escalate into a vicious cycle of mediocre performance and poor outcomes for all concerned. A further important contributor to poor outcomes is that many of how problems are being addressed are simply treating the operational triggered events as quick wins. Therefore, we need an innovative and effective approach for dealing with highly complex and multidimensional problems, ensuring that solutions at the level of the root cause.

Moreover, we are part in the systems management of any business organizations, divisions within

organizations, disciplines, and so on. Therefore, without an understanding that all these different parts in the business same as in life are extremely interconnected through the cross-functional business tasks or cross communication and collaboration, the solutions that effectively address the multi-dimensional and multidisciplinary nature of complexity will remain elusive.

The paper seeks to identify how to operationalize the ICEBERG Model in problem Solving? Therefore, this paper is presenting the methodology and application of the ICEBERG Problem Solving Tool "IPST", as a system thinking radical approach to enhancing cross functional process of the organizational communication and collaboration, to deal with the increasing complexity and to promote effective change of the process departmental wise as well as company wise. It will illustrate the implementation process in action research for an authorized automobile dealer in Riyadh, Saudi Arabia.

The automobile dealer is authorized to sell specific vehicles franchise or brand (Lafontaine & Morton, 2010; Smith, 1982). The dealer management system (DMS) software is the main software package for automobile dealers (Rahman et al., n.d.; Shashank et al., 2019). It is handling the sales, after sales, workshop loading, accounts, parts stock management, vehicles stock management, CRM, and customer contact management (call center). The dealer has more than one sales type (Retail Sales for individuals, fleet Sales for companies, Governmental Sales for Government, and Broker Sales for small vehicles distributors).

The automobile dealer is facing a critical problem that sales do not meet the dealership target, due to customer dissatisfaction of the service offered by the dealer (Anisimova & Mavondo, 2014; Fraser et al., 2013; Teli & Murumkar, 2018). Sales and customer satisfaction are two important measures for the dealer in maintaining the dealership status (Edvardsson et al., 2010). The problem is due to various factors that need to be tackled to find an optimal solution. The automobile dealer has many scattered events propagated around the complete dealer sales process (Singh et al., 2021). It seems that, every step in the process takes too much time, not going smoothly to the next process and gives poor performance.

Moreover, the events repeatedly happen. In such business complexity scenarios' where, there are many scattered events propagated around the complete sales process, like scattered pieces of a puzzle need to be assembled to form a clear vision on how to solve the problem. In the current scrambled business scenarios', we are going to use our new tool "IPST", to analysis and identify the root causes of the fluctuated persistent events around the automobile dealer retail sales process in action research cycle.

2. Theorized framework and practical illustrations

The analogy of an ICEBERG used to illustrate the conceptual model for levels of thinking (Al-Homery et al., 2019; Wang & Chin, 2020). The levels of system thinking start from three levels till seven levels (Goodman, 1997; Maani, 2007; Murray, 1998). In our ICEBERG Problem Solving Tool "IPST", we are using five levels of thinking for problem solving. The five levels of analysis for each function starts with, the event analysis as a fast action taken most of the time by management as a quick win solution to overcome the situation. They only react as per the events happen each time. Each time doing the same reaction, after a while of time, the repeated events become an obstacle, threaten the business continuity, and start causing losses.

Then we need to have another level of analysis that leads us to the trends or the patterns that produces these events. Is it a process, a system, a management, or a human factor? The third level of analysis is the structure that generates the trend which trigger the events. The fourth level of analysis is the mental models that what the assumptions, beliefs, what suppose happen as a change for the assumptions or users believes, as change to build upon our new vision as our fifth level of analysis. The analysis of ICEBERG is done cross-functional wise for one process from the beginning till the end to observe and judge the results, departmental wise till we come up with the optimum solution of the process integration functional system-wise, process-wise, management wise. As our aim is to improve dealer sales performance.

2.1. IPST application on an authorized automobile dealer

To operationalize the ICEBERG model in problem-solving, we developed the ICEBERG Problem Solving Tool "IPST". It depends on the ICEBERG model of the system thinking. The system thinking is looking for the whole system. While the dealer problems are extremely complex, have many interrelationships and frequently repeated regardless of the solutions, then system thinking can be applied.

Therefore, the starting point to have the system workflow chart of the retail sales process of the dealer. Then, we held business meetings with all participating departments sharing the same workflow process, having repeated business events, to have the complete picture of the event triggers each from his own angle. Next, we list down and draw the process owner angle, and all other related process owners' angles. After that, we track the process from the starting points of the multichannel contracts till delivering the vehicle to the customer. The automotive retail sales process starts with the customer and ends with the customer. While between the start and the end there are many processes going on in between different departments of the dealer to complete the sales task of the customer.

Through business meetings or interviews with all participants of the dealer departments, we discuss thoroughly the sales task processes together. Then, we indicate with question mark symbols "???" for the

irritating business triggered events on the system workflow chart of the dealer retail sales process, to be able to grasp the complete dealers' pining issues Appendix (A).

After that, we present the complete retail sales process as a macro cross-functional process with coordination of all dealer's participants departments until complete the customer sales task. After long discussions and clearness for every detail of the complete sales process pining issues in more than one meeting. Then, in the fifth meeting, we go through the workflow macro process cross-function to write down the happening process. Where we need to understand and write down the interrelationship of the current, the preceding and the succeeding process, for each task in the dealer workflow retail sales process, as our second step in identifying the dealer repeated pining events Figure 1.

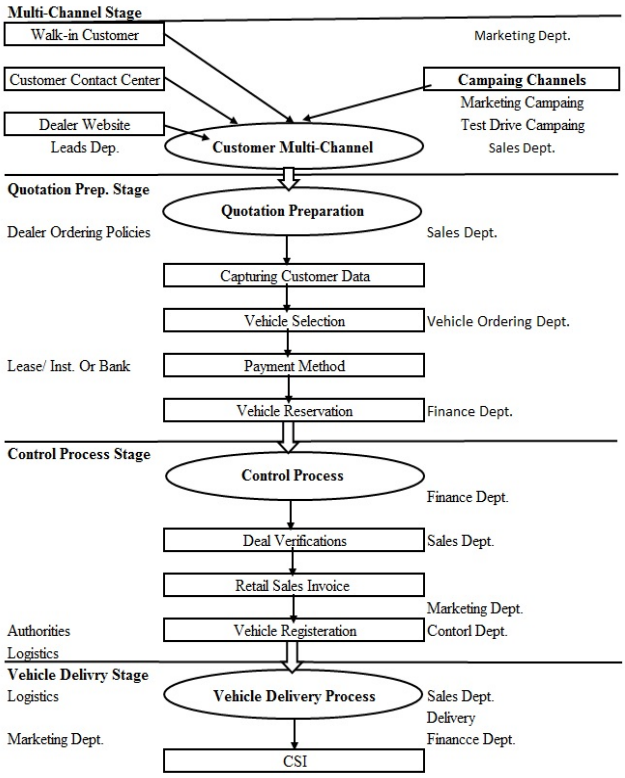


Figure 1. The dealer macro level sales process cross functional

Then, our third step, to identify the issues through the cross-functional macro-level sales process by checking the process workflow for the current process As Is in much more detail, in addition to the impact of each department process upon the dealer retail sales process, to summarize the triggered events of the current As-Is process. The general details of the As-Is process function-wise for the dealer's sales process macro level can be found in appendix (B).

The fourth step is to start doing analysis for all identified problems within the application of the ICEBERG five levels of analysis to reach our new vision for each task. After that, we feed in the (IPST) tool within the five levels of the ICEBERG analysis model (Events, Patterns/trends, Structure, Mental Models, Vision) each in it is column feed it by the summary of the most prominent features from the sequence of the events in each stage. The next step, after the implementation of the recommended solutions in the previous step. The implementation reflections results need to be represented in an analogy upside down ICEBERG model as our new vision for the next cycle of the action research as per Figure 2.

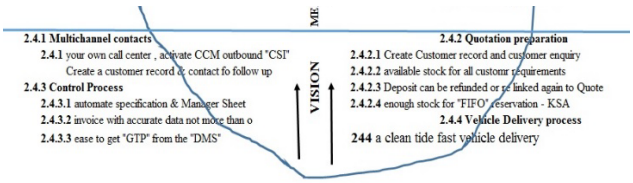


Figure 2. The ICEBERG Cross function new Vision of the second cycle

Then, with the ICEBERG new vision and the "IPST" tool for the complete sales cycle of the dealer retail sales system, the invisible triggers of repeated events, root causes will be clearer. Where we start the whole form the part or the components which constitute the whole. This complete analysis will be our new vision for the second run of the research cycle and so on.

3. Identify the problems (Cycle-1)

The automotive dealer retail sales processes are varied, passing by many stages: starting from the contact channels till delivering the vehicle to the customer. We can do either a complete action research cycle (Identify the problem, Plan action, Act, Observe, and Reflect) stage by stage or go through the whole system as one complete action research cycle before the reflection of the next cycle. By presenting the whole stages of the triggered events and analyzing the root causes, we can figure out exactly where are the leverage points in the system or the process once touched it makes a tremendous change in the dealer sales performance. Although such a way of demonstration needs more concentration, it conveys good results as long as we are working systematically. So, we must look critically for the events triggered through the system actions and interaction process.

From the overall dealer retail sales process as a macro-level process detail, the stages of root cause analysis can be identified as multichannel contacts, quotation preparation, Control process, and vehicle delivery process. Problem identification in "IPST" can be either a horizontal cross-functional analysis by taking one event, analysis the trend or the patterns. Analysis the structure, next the mental model and came out with the new vision, Figure (3), or a vertical cross-functional analysis by taking all events one after the other of one stage, then all the trends, all structures, then all mental

models of the same stage and the all-new versions of that stage events, Figure 4.

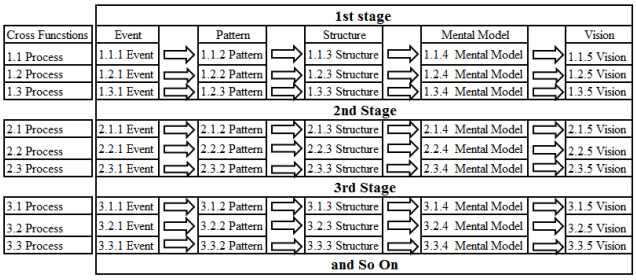


Figure 3. IPST Horizontal Cross function

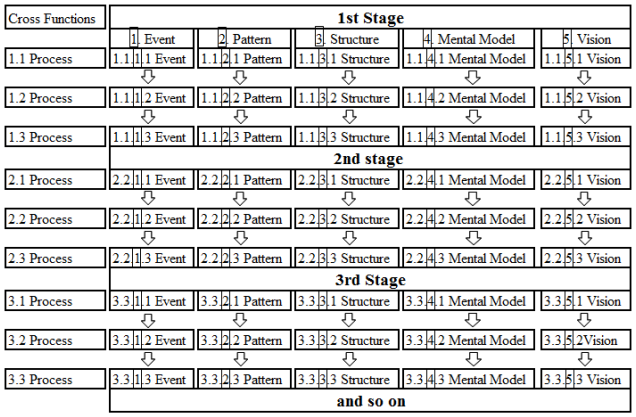


Figure 4. IPST Vertical Cross function

The "IPST" vertical cross function applied in this research paper. Summary of the action research cycles (Identify the problem, Plan the action, Action Implementation, Enhancement Observations, Reflection for Enhancement). in the next section.

3.1. Multichannel contacts:

The events which marked on the automobile dealer retail sales and tracked through the functional macro process flow are capturing the multichannel contacts, erroneous customer data, customer, vehicle selection and reservation process, Payment Method, Deal verification, Sales invoice process and approvals, Vehicle registration, and Vehicle delivery process. The events vary and it looks simply, but it is delaying the sales process. Therefore, the dealer has poor sales performance and customer dissatisfaction.

Events: The current dealer channels are walks-in, Customer contact center, Dealer website, and campaign Channel, the common event is that the customers' contacts are registered in excel sheets instead of the dealer system "DMS".

Patterns: The sales consultant receives the contacts in excel sheets from the call center, all campaign contacts, and website contacts.

Structure: The sales consultants contact the customers and do the update in excel, but do not creating the contacts or update the results in the dealer system unless the customer is purchasing. The call center of the dealer is an external party, sent the data in excel sheet for the dealer and the dealer replay back with an updated excel sheet.

Mental Model: The sales consultant feed in the customer data in the "DMS" for whom they are going to purchase, the remaining contacts, they are kept in an excel sheet for their own contacts or update the result of the contacts in an excel sheet and returned to management. The perception to have a professional call center will raise sales and customer satisfaction.

Vision: All contacts to be created in the system with a follow-up process and the DMS call center to be activated.

3.2. Quotation preparation process

Events: Customers data are frequently edited in Arabic as well as in English; Non-availability of vehicles in the available stock for sales; Link or refund the vehicle deposit and Vehicle reservation happen without deposit and reserving the latest in the stock. Patterns: The sales consultant used to open a blank inquiry or using existing customer data for the quotation preparation process; The "DMS" allows them to reserve the available in stock only; The vehicle deposit should be linked to the customer quote and should be available in the system for the cashier to be able to do a refund for the deposit in case of the return and The High demand vehicles always reserved as a fast sale item.

Structure: The sales consultants used to open blank enquiry option to avoid create a customer's record; The vehicle selection based on the franchise, model, variant, model, year, color, and trim for the available stock; For vehicle un-reservation, the deposit should be released for refund and The system allows reserve vehicles from any arrival date, but it displays the oldest arrival dates first, with the number of days in stock for sales consultants' decision.

Mental Model: The customer record creation or modify existing record not required specific filled to be fed in. Therefore, the user says why the system allows me to save the record without a message tell me there is a missing data to be fed in; All sales forecasts for new orders done through excel sheets as it is not available in the "DMS"; System update a flag for linked deposit and released deposit and The sales consultants used to reserve the nearby vehicles, regardless of it is arrival date.

Vision: The customer record creation data to be classified into Mandatory and Optional fields. To eliminate blank enquiry and activate customer enquiry in "DMS"; To have stock available for customers' requirements; The deposit

can be refunded or relinked again to customers quote and To have a "FIFO" method in vehicle reservation linked to the vehicle deposit and stock availability.

3.3. Control process

Events: The deal has incomplete papers or data; Reissue the sales invoice more than one time and the non-availability of the green ticket.

Patterns: The sales consultant does the quotation and prepare the deal file, then forward to control department for verification to issue the sales invoice; If there is an error in the customer data, wrong invoice account or wrong vehicle specification the invoice returned and reissued again and Once the vehicle invoiced, the green card of the vehicle taken to authority for vehicle registration to get the vehicle plate number and vehicle istmarah (Arabic word it means vehicle license) by the customer name.

Structure: The sales consultant prepares two manual documents designed in excel, specification sheet for vehicle specification details signed by the customer that is the required specification, then prepare a Manager sheet for vehicle chassis, customer name, vehicle price, discount, special gifts, or special offer signed by sales consultant, customer, sales supervisor, sales manager, control manager, finance; Upon these two papers, the vehicle deal verified, and the sales invoice issue or Credit note done and If the green card not available, they cannot do vehicle registration for plates or the vehicle istmarah.

Mental Model: The sales consultant must feed in the specification sheet and manager sheet and print both with the quotation for his deal to be accepted in the control. Both sheets done manually in excel so, many mistakes happen; Most of the deals missing data are coming from the blank enquiry option as it requires a minimum data to be fed it in; The vehicles Green Ticket Papers "GTP" are maintained manually in the dealer head office.

Vision: To automate the specification sheet and manager sheet in the "DMS"; To print the sales invoice with accurate data not more than one and to ease the access for the original of the "GTP" from "DMS".

3.4. Vehicle delivery process

Events: The vehicle is a different location than in the system. The vehicle has issues not shown in the system.

Patterns: Searching for the vehicle location, send to Pre-Delivery Investigation "PDI" Dept. for delivery preparation, then send for the required showroom or location for customer delivery.

Structure: To search the vehicle in the storage yard for delivery. The storage yard is crowded with stock.

Mental Model: The current storage yards are crowded with the parked vehicles, without slot parking number, only send and receive vehicle available in the current "DMS" of the dealer. Many vehicles received and sent manually not through the system. The Vison: To have a clean tide for fast vehicle delivery.

4. Plan of action and implementation of Cycle -1

What issues have been identified in the four stages of the automobile retail sales process, need to plan the action for the implementation process. The plan of action could be a manual process, a system process, a management process, or a technical process.

4.1. Dealer multichannel contacts

A physical setup planned for establishing a call center in the dealer location, by using "AVAYA" telephone set with "Nexus" call center software. The integration designed between "Nexus" and "DMS" for inbound calls. The outbound calls handled through activating the "DMS" Customer Contact Management "CCM" with "SISCO" Call Manager and Computer Telephony Integration "CTI" through design an auto script for Customer Satisfaction Survey "CSI". Other channels, contacts, a follow up workflow set it up for customer contacts in CRM of "DMS". Then, extensive training is designed for all sales consultants, in how to create a new customer record and contact record.

4.2. Quotation preparation

Customer data capturing: the blank enquiry option has been blocked in "DMS" for all sales and control staff. Then, access given for customer enquiry shortcut icon in CRM "my desktop" option. Then, classified customer data into Mandatory and advisory. Where without creating a customer record and feed in the mandatory fields the sales consultant cannot make a quotation for a customer.

Vehicle selection: depend upon the vehicle availability in the stock, which depend upon vehicle ordering, which depend upon sales forecast which done completely manually through excel sheets. While, the current "DMS" has no sales forecast program, therefore, a new program designed for vehicle sales planning as a customized program for sales forecast, as it can give the Franchise/Model/Variant, the historical record and the future planned for the coming year as per the capacity of the showroom, region, KSA.

Payment Methods: to avoid the hidden deposit, an exception report designed to show the user is there a deposit linked to the quote or not. To be able to relink again or do refund through the cashier.

Vehicle Reservation: a series of reports designed for reservation control issues under one menu called reservation reports menu. The access of this menu was given for the control department and sales management. Then, a new program designed as an add on to the dealer system for "FIFO" reservation where the program searches for the oldest arrival date for the available vehicles of the same franchise, model, variant, model year, color, and trim, then reserved in the customer quote.

4.3. Control process

Deal Verification: To avoid the manual preparation for specification and manager sheets, new programmed format stationery designed for both in one document called "Customer Purchase Approval".

Retail Sales Invoice: The blank enquiry has been already blocked and customer data have been classified into mandatory and advisory fields.

Vehicle Registration: the main issue is the "GTP" manual storage and how to search for the vehicle. A new setup is done in the "DMS" for the control staff to scan the "GTP" and stored on the vehicle record in the CRM module, with special access through finance permission.

4.4. Vehicle delivery process

The dealer yards accommodate from 21000 to 28000 vehicles. The management increased the number of yards in the main cities, they have taken two yards in Jeddah, three yards in Dammam, and main huge yard in Riyadh. System wise, a new set of reports have been designed for vehicles in transit, invoiced vehicles delivered, not delivered, or still in the storage yard.

5. Observation and reflections of Cycle-1

The implementation process of the planned actions, the customized programs as add on for the "DMS", the designed exceptions report in addition to customization of the dealer setup system to enhance the dealer performance and rush the sales cycle process. Therefore, the observation and reflections on the implementation part will be discussed in the current section.

5.1. Multichannel contacts

The automation part of "CSI" was improved too much to work better. The automation script of "CSI" reduced too much time of the service advisors. The dealer service dept. received high remarks from the dealership. The "Nexus" part is working on equal terms. The performance of "NEXUS" became weak besides "DMS" "CCM" for "CSI" performance. But, still, you cannot track any customer contact and follow the contacts chain of the customer history with the dealer. So, Customer Contact Management "CCM" to be activated inbound as well as outbound. "CCM" to be integrated with "CTI" for "SISCO" call manager and DMS "CCM". New sales scripts for outbound and inbound campaigns. To streamline the contacts of other channels and call center channel, a workflow setup is done in "DMS" to help the sales consultants follow up the contacts, to update the contacts with the events of the customers, till closing the deal via delivering the vehicles to the customers.

5.2. Quotation preparation

Customer data capturing: Still more customers having the same social ID, phone number, and even the same address. So, there is a need for more validation rules on customer phone number, social ID number as a unique customer ID. Blocking the blank enquiry has caught up the sales consultants from submitting a quote without a customer data to the control department. The sales forecast program remarkably has reduced the sales management wasting of time and vehicle ordering department.

Payment method: The designed report is working fine in the case of the linked deposit to an existing quote, but if it is not linked, it will not appear in the report. In the payment method part still in need to design another report to update the status of the depose file in case of losing the active or suspended deposit.

Vehicle reservation: The series of reservation reports helped the management too much. They have found that the vehicles have been reserved by sales consultants for more than 30 days without any tangible or real demand. The reservation program by "FIFO" is working fine and reserving the oldest in the stock from the same model variant. It makes too much restriction on sales consultant free hand on the stock reservation. Therefore, it needs to be modified in its method to search the stock by the region for the oldest vehicle of the same model variants.

5.3. Control process

Deal Verification: Producing the specification and the manager sheets into one document called the customer purchase approval, saves a lot of control dept., sales consultants' time, minimizes the errors of vehicle selection, avoid a lot of hassles round many rounding.

Retail Sales Invoice: Still, many invoices, especially in lease or instalment appears to the wrong account or wrong customer name. So, still need to validate the errors of the wrong account number or wrong customer's name.

Vehicle Registration: The option of scan "GTP" facilitates a lot of issues. It makes things clearer and speeds up the process of vehicle registration and Istmarah issuance.

5.4. Vehicle Delivery Process

The management increased the yards to accommodate the stock quantities, but some of the yard

locations have been selected wrongly, while parking or moving the vehicles as this vehicle at that location. Since there were more yards, more loss control happened, the delivery has been delayed more than before, and transportation costs have been increased. The consequences of wrong location selection. in addition to, yard management systems still required to help in yards organization and let driver easily reaches the required vehicle and in no time.

6. Discussion

This study highlights a practical application for the "IPST" tool, vertical method of identifying the root cause analysis of the dealer problems. The power of the tool in it varies aspects of the same point, where we look from more than one angle to the same event. Moreover, it provides a clear written scenario for the workflow process understanding. Therefore, the success can be guaranteed one hundred percent in the programming design tasks. The other powerful feature of the tool is the event documentation from one side and the "IPST" illustration of the implementation process and the ICEBERG's new vision from the other side. It focuses the attention on the business irritation and sums up the business troubleshooting. Seeing the triggered events in the complete whole system process, facilitate us to see the leverage points in the current business situations. Where small changes gave tremendous changes in the complete company performance.

The change can be in the process, or the way it is conceptually applied in the person's mind, or it can be in the standard of the system not working as it is supposed to be, or management concepts and so on. Generally, effective researchers, as well as existing and future leaders and managers, will need to understand today's business complexity and how to deal with within a multi-stakeholder scenario. Systems thinking is, therefore, the underlying paradigm and research approach. This paper has described the application of the ICEBERG Problem Solving Tool "IPST" for managing complex issues through enhancing the cross-function sales process of the dealer and promoting effective change. The "IPST" can greatly enhance the capacity of addressing the pinning issues and serves as a problem-solving business knowledge hub.

The research has helped to build the capacity of various process owners in different dealer departments where the events are being established. The process owners are closely involved in all the different steps of the establishment of their respective events. This close involvement has enabled a shared vision amongst process owners and helped them to understand the complexity and be able to identify the root causes of problems, rather than merely treating the symptoms. It has also helped them to develop solutions collaboratively over time, 'experiment' with them and be able to adapt when required through knowledge sharing and discussions with others. In addition, the close involvement has enabled the process owners to know how to operate "IPST". Having a process owner is another important lesson learned through the research. The process owner in a leading position who understands and support the approach in every triggered event through the dealer sales process has been established.

This is essential for the successful implementation and operation of the automobile dealer. The key challenges in this research are securing the right information from the interviewees to address the identified leverage points and systemic interventions. It is common in the formal business interview that to receive formal speech most of the time as per the policies and procedures of the company. They provide their quick actions in handling the triggered events with quick fixes, to see immediate results (appreciation) from their management point of view.

Therefore, it could take more than one step in more than one cycle of a system-based approach to achieve long-lasting sustainable outcomes by solving the root causes of problems. Finding the documentation of ICEBERG analysis in "IPST" for a process with tangible results, not for the same events, but often in a preceding or succeeding events has proved to be a major challenge, in the automobile dealer sales process endeavors. A further important challenge is the structure of the dealer management and the change management concept. Change management leads to new changes in the process and systems controls most of the time. A paradigm shift is needed to move away from this kind of structure.

7. Conclusions

The "IPST" as a business problem-solving tool origin from system thinking, can change the effectiveness of the automobile dealer sales performance through; better mutual understanding of the diverse mental models of different stakeholders; Moving away from traditional linear thinking that leads to quick fixes and treatment of the symptoms, to long-lasting systemic solutions that address the root causes; Ability to collaboratively identify leverage points and systemic interventions to underpin systems-based master and strategic plans; Deep understanding of the interconnectedness between possible actions in order to develop efficient and cost-effective management strategies; Using the ICEBERG problem solving tool "IPST" as an ongoing process of continuous clearing and refinement of management dealer sales performance.

Author Contributions: Conceptualization, H.A.A. and H.A.; methodology, H.A.A.; software, H.A.A.; validation, H.A. and A.A.; formal analysis, H.A.A.; investigation, H.A.A. and H.A.; resources, H.A.A.; data curation, H.A. and A.A.; writing—original draft preparation, H.A.A. and A.A..; writing—review and editing, H.A.A., H.A. and A.A.; visualization, H.A.A.; supervision, H.A. and A.A.; project administration, H.A. and A.A.; funding acquisition, A.A. All authors have read and agreed to the published version of the manuscript.

Funding: This research received no external funding.

Institutional Review Board Statement: Not applicable.

Inform Consent Statement: Not applicable.

Data Availability Statement: Not applicable.

Acknowledgments: The authors would like to thank Universiti Teknikal Malaysia Melaka, Malaysia, for supporting this research and publication. We also thank the reviewers for their constructive comments and suggestions.

Conflicts of Interest: The authors declare no conflict of interest.

References

Al-Homery, H. A., Ashari, H., & Ahmad, A. (2019). The Application of System Thinking for Firm Supply Chain Sustainability: The Conceptual Study of the Development of the Iceberg Problem Solving Tool (IPST). *International Journal of Supply Chain Management*, *8*, 951–956.

Anisimova, T., & Mavondo, F. (2014). Aligning company and dealer perspectives in corporate branding: implications for dealer satisfaction and commitment. *Journal of Business-to-Business Marketing*, *21*(1), 35–56.

Basole, R. C., & Rouse, W. B. (2008). Complexity of service value networks: Conceptualization and empirical investigation. *IBM Systems Journal*, *47*(1), 53–70.

D'amour, D., Ferrada-Videla, M., San Martin Rodriguez, L., & Beaulieu, M.-D. (2005). The conceptual basis for interprofessional collaboration: Core concepts and theoretical frameworks. *Journal of Interprofessional Care*, *19*(sup1), 116–131.

Edvardsson, B., Gustafsson, A., & Roos, L. (2010). Improving the prerequisites for customer satisfaction and performance: A study of policy deployment in a global truck company. *International Journal of Quality and Service Sciences*, *2*(2), 239–258.

El Ansari, W., Phillips, C. J., & Hammick, M. (2001). Collaboration and partnerships: developing the evidence base. *Health & Social Care in the Community*, *9*(4), 215–227.

Fraser, K., Tseng, B., & Hvolby, H. (2013). TQM in new car dealerships: a study from the firms' perspective. *The TQM Journal*, *25*(1), 5–17.

Goodman, M. (1997). Systems thinking: What, why, when, where, and how. *The Systems Thinker*, *8*(2), 6–7.

Hoe, L. W., Siew, L. W., & Fai, L. K. (2017). Improvement on the efficiency of technology companies in Malaysia with Data Envelopment Analysis model. *Advances in Visual Informatics: 5th International Visual Informatics Conference, IVIC 2017, Bangi, Malaysia, November 28–30, 2017, Proceedings 5*, 19–30.

Kaplan, R. S., Robert, N. P. D. K. S., Kaplan, R. S., & Norton, D. P. (2001). *The strategy-focused organization: How balanced scorecard companies thrive in the new business environment*. Harvard Business Press.

Lafontaine, F., & Morton, F. S. (2010). Markets: State franchise laws, dealer terminations, and the auto crisis. *Journal of Economic Perspectives*, *24*(3), 233–250.

Maani, K. (2007). *Systems Thinking, System Dynamics: Managing Change and Complexity*. Prentice Hall.

Murray, P. J. (1998). Complexity theory and the fifth discipline. *Systemic Practice and Action Research*, *11*, 275–293.

Rahman, M. A., Newaz, M. K., Ahamed, S., & Aenney, R. A. (n.d.). Design and Execution of Automated Sub-Dealer Management System Software. *International Journal of Computer Applications*, *975*, 8887.

Riege, A. (2005). Three-dozen knowledge-sharing barriers managers must consider. *Journal of Knowledge Management*, *9*(3), 18–35.

Shashank, B. N., Kumar, K. M., & Singh, S. K. (2019). Implementation of dealer Management system in an earth moving and Construction Equipment Manufacturing Company. *Asian Journal of Management*, *10*(4), 321–329.

Singh, A., Jenamani, M., Thakkar, J. J., & Rana, N. P. (2021). Propagation of online consumer perceived negativity: Quantifying the effect of supply chain underperformance on passenger car sales. *Journal of Business Research*, *132*, 102–114.

Smith, R. L. (1982). Franchise regulation: An economic analysis of state restrictions on automobile distribution. *The Journal of Law and Economics*, *25*(1), 125–157.

Teli, S. N., & Murumkar, A. (2018). Automobile Dealer Quality Cost: A Review. *National Conference on Recent Trends in Engineering & Technology (NCRTET-18)*.

Wang, S., & Chin, T. (2020). A stratified system of knowledge and knowledge icebergs in cross-cultural business models: Synthesising ontological and epistemological views. *Journal of International Management*, *26*(4), 100780.