

DHP Publication Decision
Assignment 1 – Decision Framing

Rachel Armington
University of Maryland University College
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Professor Charles Knode
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Introduction

The purpose of this assignment is to frame a decision to be analyzed by using DecisionsFirst software to build a Decisions Requirements Model. According to Professor Knode, Decision Requirements Modeling is beneficial because it:

1. Provides 'structure' to the analytics process (who, what, how, when).
2. Provides 'transparency' of the decision process so analytics can be applied.
3. Promotes 'buy in' by engaging business users in describing their problem.
4. Fosters innovation by focusing on the problem not the technology.
5. Standardizes the approach to decision making whether automated or manual.
6. Enables an audit trail for decisions by standardizing its structure.
7. Improves/changes the business model not just the analytic model (Taylor, 2015, p. 4).

This assignment will apply the five steps of decision modeling (identify decisions, describe decisions, specify decision requirements, decompose and refine the model, and generate an Analytic Requirements Document) to a decision-making scenario within ABC Services, Inc. (ABC), an independent business-to-business health information publishing company in Washington D.C.

Identify Decisions

Background

ABC publishes a variety of newsletters, webinars, white papers, newsfeed stories, directories, and databases. Within the last year, ABC has taken significant steps toward digital publishing methods and away from paper printing methods. However, amidst all of these changes, in mid-2015, ABC began laying off workers and cutting back on funds. Thus, the company is looking to change the publication date of its best selling product, *ABC's Directory of Health Plans (DHP)* to improve company profits. More specifically, ABC is looking to increase the product value of *DHP* by giving the Directories & Databases department more time to improve the product's data quality.

Objective, Audience, and Practical Implication

The objective of the project is to increase company profitability. The Decisions Requirements Diagram is designed for ABC's corporate management team to assist them in deciding when to publish *DHP*. Decision modeling will improve collaboration across ABC's management, sales and marketing, customer service, and directories & databases teams. Furthermore, it will help link analytics to business results and ensure successful deployment (Taylor, 2015).

Analytic Question

When is the ideal time to publish *DHP* to optimize company profits, based on results from the data quality management model?

Describe Decisions

There are five decisions involved in the Decisions Requirements Diagram (Figure 1). All of these decisions are repeatable, non-trivial, and have a measurable business impact. Find each of the five decisions described below, along with their a) question and allowed answers, b) business context, c) organizational context, and d) application context.

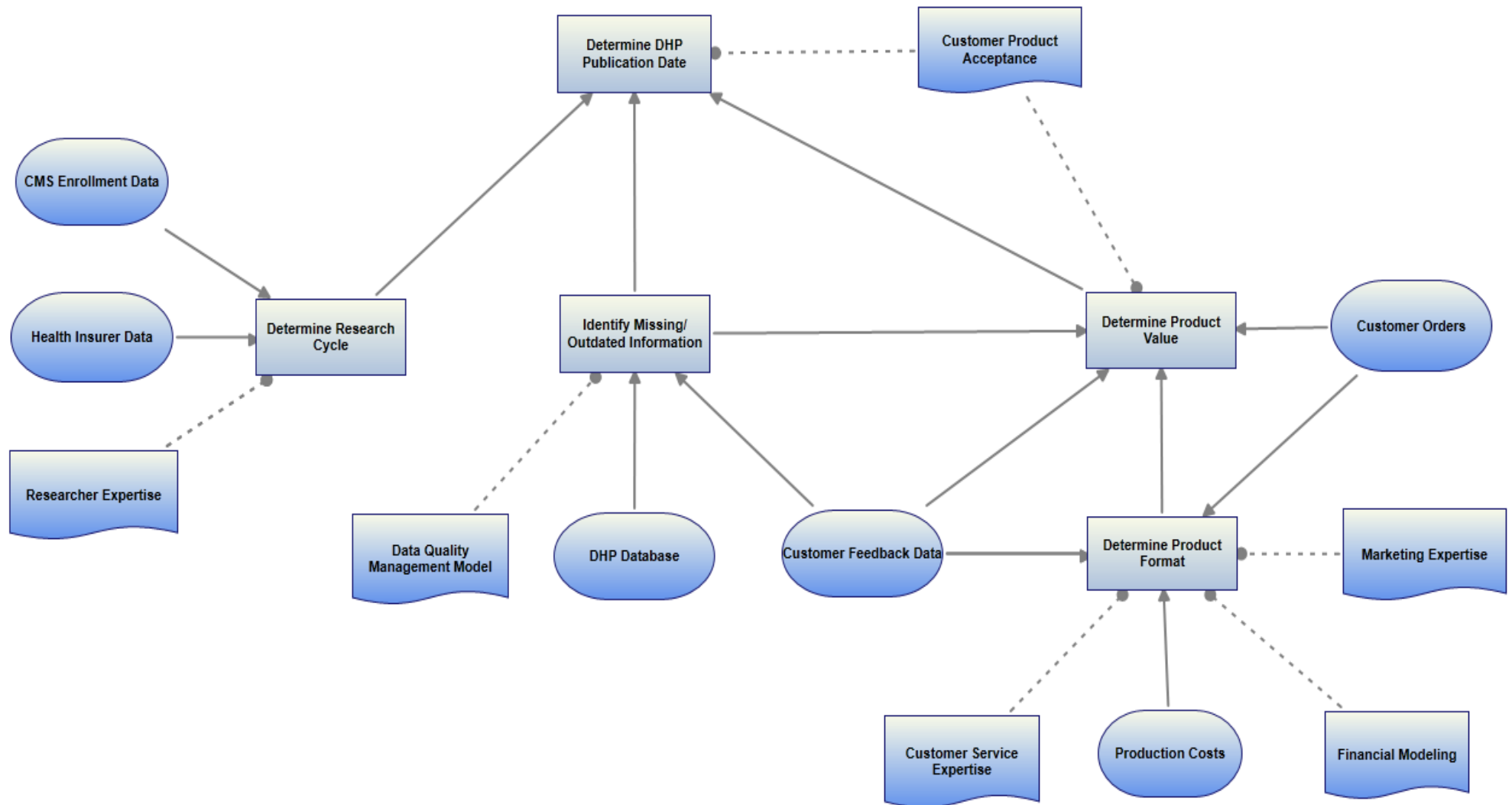
1. Determine *DHP* Publication Date: All of ABC's products have a publication date. ABC must select a publication date for *DHP*. The publication date must be at least two months after the end of the research cycle.
 - a. In order to determine this date, ABC's executive team should answer the question: What month should this specific edition of *DHP* be published and released to paid customers? The team can choose a specific value from a list of months to answer this question. The default answer is "February," since ABC published the previous 12 editions in this month.
 - b. Objective: increase company profitability, KPI: net profit margin. *DHP* is ABC's key money-maker, so altering the publication date would have a huge impact on the company's finances.
 - c. The decision is owned by and made by ABC, but it impacts the Directories & Databases, customer support, and sales and marketing teams.
 - d. Systems: *DHP* User Support page, ABC Health Data subscriber website. ABC uploads all published *DHP* pages to both of these sites.
2. Determine Research Cycle: The Directories & Databases department must decide on a specific three-month period to conduct research for *DHP*. During the research cycle, researchers send out a survey to contacts at every health insurance company nationwide and instruct them to verify and/or update basic information, including addresses, website URLs, phone and fax numbers, 18 C-suite executives' names, profit statuses, service areas, and aliases, as well as end-year enrollment data.
 - a. Question and allowed answers: In what three consecutive months should the research cycle for this edition of *DHP* take place? Like the previous decision, there are specific values that the team can choose from in response to this question. The default value is "October 1 – December 31," since this was the designated research cycle for the previous 12 editions of the product.
 - b. Objective: increase data quality, KPI: number of survey responses. Since the majority of *DHP* content comes from the health insurance companies themselves, selecting a good research cycle timing is crucial. The number of survey responses received from the insurance companies can measure the good timing of the research cycle.
 - c. The decision is owned and made by the Directories & Databases department, but impacts the customer service and sales and marketing teams.
 - d. Event: Open Enrollment: the "yearly period when people can enroll in a health insurance plan through the Health Insurance Marketplace" (Healthcare.gov, 2015). The Open Enrollment Period for the 2016 plan year begins on November 1, 2015 and ends on January 31, 2016. Since the implementation of the health insurance exchanges in 2014, ABC's research cycle has fallen around the same time as Open Enrollment. This has negatively affected the quantity and quality of data received from health insurance company contacts. It is critical to consider the Open Enrollment event when selecting a research cycle.
 Event: Annual and Quarterly Financial Statement Filing Deadlines: NAIC sets these deadlines. Many health insurers refuse to release their enrollment data before submitting it to the NAIC for review.
3. Identify Missing/Outdated Information: The researchers in the Directories & Databases department must find all pieces of missing information for each health insurance plan in *DHP*.

- a. Question and allowed answers: What specific set of information is missing from this edition of *DHP*? The allowed answer type is a database value from the DHP database. See Appendix A: Analytics Requirements Document for all possible database values. The default answer is “None.”
 - b. Objectives: increase data quality and increase product value, KPI: number of correct data fields in the *DHP* database. The greater the number of correct fields in the database, the less updates/corrections submitted on the survey responses.
 - c. The decision is owned and made by the Directories & Databases department, but it impacts the customer service and sales and marketing teams.
 - d. Process: Enrollment Check (for more information, see Appendix B: Enrollment Check Process)
System: *DHP* User Support page. ABC uploads all data updates to the user support page.
4. Determine Product Value: This is the value of *DHP*, as reflected through the customer price. Price is specific to the format of publication. Thus, since digital formats are in higher demand, ABC prices the subscriber-based database access, CD and USB formats higher to help increase company profits.
 - a. Question and allowed answer: What is the price for this specific format of this year’s *DHP* edition? The allowed answer type is a number range from \$682 to \$10,000. The print only version of *ABC’s Directory of Health Plans: 2015* was \$682; the single-user CD database and USB flash drive versions were \$2,125 each; and the multi-user database version was \$7,775.
 - b. Objective: increase product value, KPI: average purchase value, average *DHP* format value.
 - c. The decision is owned and made by ABC, but it impacts the Directories & Databases, sales and marketing, and customer support teams.
 - d. System: ABC Marketplace: The sales and marketing department posts all of ABC’s products on the company Marketplace website, complete with an image, price, and description of the products.
5. Determine Product Format: This is the format of the product: CD database, USB flash drive database, print version, multi-user database, etc.
 - a. In order to determine the format of *DHP*, the executive team should answer the question: What specific format(s) should be used for this particular edition of *DHP*? The team can select a value from an explicit list of possible product formats. The default value is “All of the Above,” since ABC published the 2015 edition of *DHP* in print, CD, USB, and multi-user formats.
 - b. Objectives: increase customer satisfaction, increase ABC products sold, increase product value, KPIs: number of customer complaints, number of products sold, average purchase value.
 - c. The decision is owned by ABC, made by the Directories & Databases department, and impacts the sales and marketing and customer support departments.
 - d. Systems: *DHP* User Support page, ABC Health Data, ABC Marketplace.

Specify Decision Requirements

The Decision Requirements Diagram includes six input data requirements, two analytic requirements, four knowledge sources, and five related decisions (see Figure 1).

Figure 1. Decision Requirements Diagram, ‘DHP Publication Decision’



References

- Decision Management Solutions. (2015, March 11). DecisionsFirst Modeler tutorial walkthrough [video file]. Retrieved from <http://www.screencast.com/t/FkOrgjyK3>
- Decision Management Solutions. (2015, March 18). Tutorial overview. Retrieved from <http://support.decisionsfirst.com/customer/portal/articles/1002643-tutorial-overview>
- Taylor, J. (2015). *Decision modeling with DMN*. Retrieved from <http://www.decisionmanagementsolutions.com/whitepaper/decision-modeling-with-dmn/>
- Taylor, J. (2013, August 22). Improve analytic results using decision modeling [webinar]. In *IIA Webinar Series*. Retrieved from <http://iianalytics.com/analytics-resources/improve-analytic-results-with-decision-modeling>
- U.S. Centers for Medicare & Medicaid Services. (2015). Open Enrollment Period. Retrieved from <https://www.healthcare.gov/glossary/open-enrollment-period/>

Appendices

Appendix A: Analytics Requirements Document

Nodes		Description
Decision	Determine DHP Publication Date	All of ABC's products have a publication date. ABC must select a publication date for <i>DHP</i> . The publication date must be at least two months after the end of the research cycle.
Decision	Determine Research Cycle	The Directories & Databases department must decide on a specific three-month period to conduct research for <i>DHP</i> . During the research cycle, researchers send out a survey to contacts at every health insurance company nationwide and instruct them to verify and/or update basic information, including addresses, website URLs, phone and fax numbers, 18 C-suite executives' names, profit statuses, service areas, and aliases, as well as end-year enrollment data.

Nodes		Description
Decision	Determine Product Value	This is the value of <i>ABC's Directory of Health Plans (DHP)</i> , as reflected through the customer price. Since <i>DHP</i> is ABC's biggest publication, the company must consider rABCing the prices slightly. Price is specific to the format of publication. Thus, since digital formats are in higher demand, the subscriber-based database access, CD and USB formats should be priced higher to help increase company profits.
Decision	Identify Missing/Outdated Information	The researchers in the Directories & Databases department must find all pieces of missing information for each health insurance plan in <i>DHP</i> . In order to keep its reputation as an accurate and trustworthy publishing company, ABC cannot misrepresent any companies. All information in each health insurance company's listing (e.g. company name, address, telephone, fax, executives' names, enrollment data, etc.) must be gone over with a fine-toothed comb.

Nodes		Description
Decision	Determine Product Format	This is the format of the product: CD database, USB flash drive database, Print version, Multi-user database, etc. Production costs, customer feedback, product value, and other factors should be considered in making this decision.
Data Source	Production Costs	This is expense information including the cost of publishing <i>ABC's Directory of Health Plans</i> .
Data Source	Customer Orders	This is ABC's database of product orders.
Data Source	Customer Feedback Data	A data set comprised of customer comments and questions about specific products.
Data Source	DHP Database	This is the main database that contains all information published in <i>ABC's Directory of Health Plans (DHP)</i> . This includes top executives' names and end-year enrollment data for all health insurance companies nationwide.
Data Source	CMS Enrollment Data	Medicare data collected from the state, county, contract enrollment reports released by the Centers for Medicare and Medicaid Services (CMS).
Data Source	Health Insurer Data	Data collected from health insurance company contacts.

Nodes		Description
Know How	Marketing Expertise	The know-how of the marketing department on the products customers like to purchase and what they do not.
Know How	Customer Service Expertise	Know-how of the customer service department on what customers like and what they do not. Also, knowledge about what the average customer can do technology-wise.
Know How	Researcher Expertise	
Know How	Customer Product Acceptance	Customers' willingness to purchase ABC's product.
Know How	Financial Modeling	Preparing company models and performing financial analytics to help with decision-making. Includes providing insight on the sales and profits of the product overtime.
Know How	Data Quality Management Model	Involves the means of acquiring data (collection); the purpose for collecting data (application); the storing of data (warehousing); and the understanding of data (analysis). Data should be accurate, accessible, up-to-date, clean, consistent, and timely.

**Determine DHP Publication Date
Strategic Decision**

All of ABC's products have a publication date. ABC must select a publication date for *DHP*. The publication date must be at least two months after the end of the research cycle.

Question: What month should this specific edition of DHP be published and released to paid customers?

Answer Type Value from explicit list

Answers January, February, March, April, May, June, July, August, September, October, November, December

Default Answer: February

Supporting Information: For the past 12 editions, DHP has gone to the printer in January for a February publication date. Delaying the publication date will have a major impact on the company's overall income. Although DHP generates income year-round, a large chunk of the company's profits come from DHP pre-sales before the Winter holidays.

Requirements Network

Requires		Description
Decision	Determine Research Cycle	The Directories & Databases department must decide on a specific three-month period to conduct research for <i>DHP</i> . During the research cycle, researchers send out a survey to contacts at every health insurance company nationwide and instruct them to verify and/or update basic information, including addresses, website URLs, phone and fax numbers, 18 C-suite executives' names, profit statuses, service areas, and aliases, as well as end-year enrollment data.

Requires		Description
Decision	Determine Product Value	This is the value of <i>ABC's Directory of Health Plans (DHP)</i> , as reflected through the customer price. Since <i>DHP</i> is <i>ABC's</i> biggest publication, the company must consider raising the prices slightly. Price is specific to the format of publication. Thus, since digital formats are in higher demand, the subscriber-based database access, CD and USB formats should be priced higher to help increase company profits.
Decision	Identify Missing/Outdated Information	The researchers in the Directories & Databases department must find all pieces of missing information for each health insurance plan in <i>DHP</i> . In order to keep its reputation as an accurate and trustworthy publishing company, <i>ABC</i> cannot misrepresent any companies. All information in each health insurance company's listing (e.g. company name, address, telephone, fax, executives' names, enrollment data, etc.) must be gone over with a fine-toothed comb.
Knowledge Source	Customer Product Acceptance	Customers' willingness to purchase <i>ABC's</i> product.

Properties

Name	Value	Description
Volume	Low	
Variability	Low	

Name	Value	Description
Complexity	Low	
Time to outcome	Medium	
Repeatability	Low	
Measurability	Low	
Decision Value Decay		This decision must be made fairly quickly to give researchers time to collect and analyze the data. ABC's regular customers anticipate the annual release of DHP and purchase it before it is printed.

Objectives

Influences Objectives	Impact	Notes
Increase Company Profitability		

Organizations

Owned by
ABC Services, Inc. (ABC)
Made By
ABC Services, Inc. (ABC)
Impacts
ABC Directories & Databases
ABC Customer Support
ABC Sales and Marketing

Relationships

Implemented in Systems
DHP User Support Page
ABC Health Data Subscriber Website

**Determine Research Cycle
Tactical Decision**

The Directories & Databases department must decide on a specific three-month period to conduct research for *DHP*. During the research cycle, researchers send out a survey to contacts at every health insurance company nationwide and instruct them to verify and/or update basic information, including addresses, website URLs, phone and fax numbers, 18 C-suite executives' names, profit statuses, service areas, and aliases, as well as end-year enrollment data.

Question: In what three consecutive months should the research cycle for this edition of DHP take place?

Answer Type Value from explicit list

Answers January 1 - March 31, February 1 - April 30, March 1 - May 31, April 1 - June 30, May 1 - July 31, June 1 - August 31, July 1 - September 30, August 1 - October 31, September 1 - November 30, October 1 - December 31, November 1 - January 31, December 1 - February 28

Default Answer: October 1 - December 31

Supporting Information: For the past 12 editions, the research cycle began in October and ran through December.

Requirements Network

Requires		Description
Knowledge Source	Researcher Expertise	
Input Data	CMS Enrollment Data	Medicare data collected from the state, county, contract enrollment reports released by the Centers for Medicare and Medicaid Services (CMS).
Input Data	Health Insurer Data	Data collected from health insurance company contacts.

Required by		Description
Decision	Determine DHP Publication Date	All of ABC's products have a publication date. ABC must select a publication date for <i>DHP</i> . The publication date must be at least two months after the end of the research cycle.

Properties

Name	Value	Description
Volume	High	
Variability	Medium	
Complexity	Low	
Repeatability	Medium	
Measurability	Medium	
Time to outcome	Long	
Decision Value Decay		Medium - decision must be made fairly quickly so that the Directories & Databases department can begin researching.

Objectives

Influences Objectives	Impact	Notes
Increase Data Quality		

Organizations

Owned by
ABC Directories & Databases
Made By
ABC Directories & Databases
Impacts
ABC Customer Support
ABC Sales and Marketing

Relationships

Triggered by Events
Open Enrollment
Annual and Quarterly Financial Statement Filing Deadlines

Determine Product Value
Tactical Decision

This is the value of *ABC's Directory of Health Plans (DHP)*, as reflected through the customer price. Since *DHP* is ABC's biggest publication, the company must consider raising the prices slightly. Price is specific to the format of publication. Thus, since digital formats are in higher demand, the subscriber-based database access, CD and USB formats should be priced higher to help increase company profits.

Question: What is the price for this specific format of this year's DHP edition?

Answer Type Number in range

Answers Min 682, Max 10000

Default Answer:

Supporting Information: The most recent edition of ABC's Directory of Health Plans (2015) ranged in price from \$682.00 (print version only format) to \$7,775.00 (multi-user database format).

Requirements Network

Requires		Description
Decision	Identify Missing/Outdated Information	The researchers in the Directories & Databases department must find all pieces of missing information for each health insurance plan in <i>DHP</i> . In order to keep its reputation as an accurate and trustworthy publishing company, ABC cannot misrepresent any companies. All information in each health insurance company's listing (e.g. company name, address, telephone, fax, executives' names, enrollment data, etc.) must be gone over with a fine-toothed comb.

Requires		Description
Decision	Determine Product Format	This is the format of the product: CD database, USB flash drive database, Print version, Multi-user database, etc. Production costs, customer feedback, product value, and other factors should be considered in making this decision.
Input Data	Customer Orders	This is ABC's database of product orders.
Input Data	Customer Feedback Data	A data set comprised of customer comments and questions about specific products.
Knowledge Source	Customer Product Acceptance	Customers' willingness to purchase ABC's product.

Required by		Description
Decision	Determine DHP Publication Date	All of ABC's products have a publication date. ABC must select a publication date for <i>DHP</i> . The publication date must be at least two months after the end of the research cycle.

Properties

Name	Value	Description
Volume	High	
Variability	High	
Complexity	Medium	
Repeatability	Medium	
Measurability	High	

Name	Value	Description
Time to outcome	Medium	
Decision Value Decay		Medium - decisions must be made fairly quickly so that the sales team can begin marketing the product before it is published. ABC gets many pre-sales for this product.

Objectives

Influences Objectives	Impact	Notes
Increase Product Value		

Organizations

Owned by
ABC Services, Inc. (ABC)
Made By
ABC Services, Inc. (ABC)
Impacts
ABC Sales and Marketing
ABC Customer Support
ABC Directories & Databases

Relationships

Implemented in Systems
ABC Marketplace

Identify Missing/Outdated Information Operational Decision

The researchers in the Directories & Databases department must find all pieces of missing information for each health insurance plan in *DHP*. In order to keep its reputation as an accurate and trustworthy publishing company, ABC cannot misrepresent any companies. All information in each health insurance company's listing (e.g. company name, address, telephone, fax, executives' names, enrollment data, etc.) must be gone over with a fine-toothed comb.

Question: What specific set of information is missing from this edition of DHP?

Answer Type Value from database

Answers ASO Enrollment, Public Sector Enrollment, Total Medical Enrollment, State Breakdown Enrollment, Individual Enrollment, Medicare Supplement Enrollment, Group Risk Enrollment, Commercial Sector Enrollment, CEO Name, President Name, Marketing/PR Name, HR Name, CFO Name, COO Name, CMO Name, Legal/Government Relations Name, Customer Service Name, Public Exchange Enrollment, Medicare Enrollment, Medicaid Enrollment, None

Default Answer: None

Supporting Information: Each executives' name must be complete with a first and last name. Enrollment figures must be exact in order for the enrollment check process to check out correctly.

Requirements Network

Requires		Description
Input Data	Customer Feedback Data	A data set comprised of customer comments and questions about specific products.
Input Data	DHP Database	This is the main database that contains all information published in <i>ABC's Directory of Health Plans (DHP)</i> . This includes top executives' names and end-year enrollment data for all health insurance companies nationwide.
Knowledge Source	Data Quality Management Model	Involves the means of acquiring data (collection); the purpose for collecting data (application); the storing of data (warehousing); and the understanding of data (analysis). Data should be accurate, accessible, up-to-date, clean, consistent, and timely.

Required by		Description
Decision	Determine DHP Publication Date	All of ABC's products have a publication date. ABC must select a publication date for <i>DHP</i> . The publication date must be at least two months after the end of the research cycle.
Decision	Determine Product Value	This is the value of ABC's <i>Directory of Health Plans (DHP)</i> , as reflected through the customer price. Since <i>DHP</i> is ABC's biggest publication, the company must consider raising the prices slightly. Price is specific to the format of publication. Thus, since digital formats are in higher demand, the subscriber-based database access, CD and USB formats should be priced higher to help increase company profits.

Properties

Name	Value	Description
Volume	High	
Complexity	High	
Variability	High	
Repeatability	High	
Time to outcome	Medium	
Measurability	High	
Decision Value Decay		

Objectives

Influences Objectives	Impact	Notes
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Influences Objectives	Impact	Notes
Increase Data Quality		
Increase Product Value		

Organizations

Owned by
ABC Directories & Databases
Made By
ABC Directories & Databases
Impacts
ABC Customer Support
ABC Sales and Marketing

Relationships

Used by Processes
Enrollment Check
Implemented in Systems
DHP User Support Page

Determine Product Format

Tactical Decision

This is the format of the product: CD database, USB flash drive database, Print version, Multi-user database, etc. Production costs, customer feedback, product value, and other factors should be considered in making this decision.

Question: What specific format(s) should be used for this particular edition of DHP?

Answer Type Value from explicit list

Answers CD Database (Single-User), USB Flash Drive (Single-User), Print Version Only, Multi-User Database, CD Database and Print Version (Single-User), Online/Subscription-Based, All of the Above, None, Other

Default Answer: All of the Above

Supporting Information: Digital formats should be priced higher to keep product profits up.

Requirements Network

Requires		Description
Input Data	Production Costs	This is expense information including the cost of publishing <i>ABC's Directory of Health Plans</i> .
Input Data	Customer Orders	This is ABC's database of product orders.
Knowledge Source	Marketing Expertise	The know-how of the marketing department on the products customers like to purchase and what they do not.
Knowledge Source	Customer Service Expertise	Know-how of the customer service department on what customers like and what they do not. Also, knowledge about what the average customer can do technology-wise.
Input Data	Customer Feedback Data	A data set comprised of customer comments and questions about specific products.
Knowledge Source	Financial Modeling	Preparing company models and performing financial analytics to help with decision-making. Includes providing insight on the sales and profits of the product overtime.

Required by	Description
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Required by		Description
Decision	Determine Product Value	This is the value of <i>ABC's Directory of Health Plans (DHP)</i> , as reflected through the customer price. Since <i>DHP</i> is ABC's biggest publication, the company must consider raising the prices slightly. Price is specific to the format of publication. Thus, since digital formats are in higher demand, the subscriber-based database access, CD and USB formats should be priced higher to help increase company profits.

Properties

Name	Value	Description
Volume	Medium	
Variability	High	
Complexity	Medium	
Repeatability	Medium	
Measurability	High	
Time to outcome	Medium	
Decision Value Decay		

Objectives

Influences Objectives	Impact	Notes
Increase Customer Satisfaction		
Increase ABC Products Sold		
Increase Product Value		

Organizations

Owned by

ABC Services, Inc. (ABC)
Made By
ABC Directories & Databases
Impacts
ABC Sales and Marketing
ABC Customer Support

Relationships

Implemented in Systems
DHP User Support Page
ABC Marketplace
ABC Health Data Subscriber Website

Production Costs

Internal, Semi-structured Information Source

This is expense information including the cost of publishing *ABC's Directory of Health Plans*.

Requirements Network

Required by		Description
Decision	Determine Product Format	This is the format of the product: CD database, USB flash drive database, Print version, Multi-user database, etc. Production costs, customer feedback, product value, and other factors should be considered in making this decision.

Customer Orders

Internal, Structured Information Source

This is ABC's database of product orders.

Requirements Network

Required by		Description
Decision	Determine Product Value	This is the value of <i>ABC's Directory of Health Plans (DHP)</i> , as reflected through the customer price. Since <i>DHP</i> is ABC's biggest publication, the company must consider raising the prices slightly. Price is specific to the format of publication. Thus, since digital formats are in higher demand, the subscriber-based database access, CD and USB formats should be priced higher to help increase company profits.
Decision	Determine Product Format	This is the format of the product: CD database, USB flash drive database, Print version, Multi-user database, etc. Production costs, customer feedback, product value, and other factors should be considered in making this decision.

Customer Feedback Data

Internal, Unstructured Information Source

A data set comprised of customer comments and questions about specific products.

Requirements Network

Required by	Description
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Required by		Description
Decision	Determine Product Value	This is the value of <i>ABC's Directory of Health Plans (DHP)</i> , as reflected through the customer price. Since <i>DHP</i> is <i>ABC's</i> biggest publication, the company must consider raising the prices slightly. Price is specific to the format of publication. Thus, since digital formats are in higher demand, the subscriber-based database access, CD and USB formats should be priced higher to help increase company profits.
Decision	Identify Missing/Outdated Information	The researchers in the Directories & Databases department must find all pieces of missing information for each health insurance plan in <i>DHP</i> . In order to keep its reputation as an accurate and trustworthy publishing company, <i>ABC</i> cannot misrepresent any companies. All information in each health insurance company's listing (e.g. company name, address, telephone, fax, executives' names, enrollment data, etc.) must be gone over with a fine-toothed comb.
Decision	Determine Product Format	This is the format of the product: CD database, USB flash drive database, Print version, Multi-user database, etc. Production costs, customer feedback, product value, and other factors should be considered in making this decision.

DHP Database**Internal, Structured Information Source**

This is the main database that contains all information published in *ABC's Directory of Health Plans (DHP)*. This includes top executives' names and end-year enrollment data for all health insurance companies nationwide.

Requirements Network

Required by		Description
Decision	Identify Missing/Outdated Information	The researchers in the Directories & Databases department must find all pieces of missing information for each health insurance plan in <i>DHP</i> . In order to keep its reputation as an accurate and trustworthy publishing company, ABC cannot misrepresent any companies. All information in each health insurance company's listing (e.g. company name, address, telephone, fax, executives' names, enrollment data, etc.) must be gone over with a fine-toothed comb.

CMS Enrollment Data**External, Structured Information Source**

Medicare data collected from the state, county, contract enrollment reports released by the Centers for Medicare and Medicaid Services (CMS).

Requirements Network

Required by	Description
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Required by		Description
Decision	Determine Research Cycle	The Directories & Databases department must decide on a specific three-month period to conduct research for <i>DHP</i> . During the research cycle, researchers send out a survey to contacts at every health insurance company nationwide and instruct them to verify and/or update basic information, including addresses, website URLs, phone and fax numbers, 18 C-suite executives' names, profit statuses, service areas, and aliases, as well as end-year enrollment data.

Health Insurer Data

Pooled, Semi-structured Information Source

Data collected from health insurance company contacts.

Requirements Network

Required by	Description
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Required by		Description
Decision	Determine Research Cycle	The Directories & Databases department must decide on a specific three-month period to conduct research for <i>DHP</i> . During the research cycle, researchers send out a survey to contacts at every health insurance company nationwide and instruct them to verify and/or update basic information, including addresses, website URLs, phone and fax numbers, 18 C-suite executives' names, profit statuses, service areas, and aliases, as well as end-year enrollment data.

Marketing Expertise

Know how- Expertise

The know-how of the marketing department on the products customers like to purchase and what they do not.

Requirements Network

Required by		Description
Decision	Determine Product Format	This is the format of the product: CD database, USB flash drive database, Print version, Multi-user database, etc. Production costs, customer feedback, product value, and other factors should be considered in making this decision.

Customer Service Expertise

Know how- Expertise

Know-how of the customer service department on what customers like and what they do not. Also, knowledge about what the average customer can do technology-wise.

Requirements Network

Required by		Description
Decision	Determine Product Format	This is the format of the product: CD database, USB flash drive database, Print version, Multi-user database, etc. Production costs, customer feedback, product value, and other factors should be considered in making this decision.

Researcher Expertise Know how- Expertise

Requirements Network

Required by		Description
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Required by		Description
Decision	Determine Research Cycle	The Directories & Databases department must decide on a specific three-month period to conduct research for <i>DHP</i> . During the research cycle, researchers send out a survey to contacts at every health insurance company nationwide and instruct them to verify and/or update basic information, including addresses, website URLs, phone and fax numbers, 18 C-suite executives' names, profit statuses, service areas, and aliases, as well as end-year enrollment data.

Customer Product Acceptance Know how- Analytic Insight

Customers' willingness to purchase ABC's product.

Requirements Network

Required by		Description
Decision	Determine DHP Publication Date	All of ABC's products have a publication date. ABC must select a publication date for <i>DHP</i> . The publication date must be at least two months after the end of the research cycle.

Required by		Description
Decision	Determine Product Value	This is the value of <i>ABC's Directory of Health Plans (DHP)</i> , as reflected through the customer price. Since <i>DHP</i> is ABC's biggest publication, the company must consider raising the prices slightly. Price is specific to the format of publication. Thus, since digital formats are in higher demand, the subscriber-based database access, CD and USB formats should be priced higher to help increase company profits.

Financial Modeling

Know how- Analytic Insight

Preparing company models and performing financial analytics to help with decision-making. Includes providing insight on the sales and profits of the product overtime.

Requirements Network

Required by		Description
Decision	Determine Product Format	This is the format of the product: CD database, USB flash drive database, Print version, Multi-user database, etc. Production costs, customer feedback, product value, and other factors should be considered in making this decision.

Data Quality Management Model

Know how- Analytic Insight

Involves the means of acquiring data (collection); the purpose for collecting data (application); the storing of data (warehousing); and the understanding of data (analysis). Data should be accurate, accessible, up-to-date, clean, consistent, and timely.

Requirements Network

Required by		Description
Decision	Identify Missing/Outdated Information	The researchers in the Directories & Databases department must find all pieces of missing information for each health insurance plan in <i>DHP</i> . In order to keep its reputation as an accurate and trustworthy publishing company, ABC cannot misrepresent any companies. All information in each health insurance company's listing (e.g. company name, address, telephone, fax, executives' names, enrollment data, etc.) must be gone over with a fine-toothed comb.

Appendix B: Enrollment Check Process

ABC's Directories & Databases department researchers must collect various enrollment figures from health insurance company sources during the *DHP* research cycle, shown below in Figure 2. After entering the figures, researchers must conduct the enrollment check process to ensure that all health plan enrollment adds up correctly.

Level A fields add up to Total Medical Enrollment				
Level B fields add up to the total Level A field above them				
Level C fields add up to the total Level B field above them				
Level D fields add up to the total Level C field above them				
Total Medical Enrollment				
	A. Total Fully Funded			
	B. Commercial Risk			
		C. Total Group Risk		
			D. Small Group Risk	
			D. Large Group Risk	
		C. Individual (Non-Group)		
		C. Medicare Supplement		
	B. Public Sector Risk			
		C. Total Medicare Advantage		
			D. Medicare CCP	
			D. Medicare Cost	
			D. Medicare PFFS	
			D. PACE Program	
		C. Dual Eligibles		
		C. Medicaid HMO (Risk)		
		C. Medicaid FFS (Risk)		
		C. SCHIP		
	B. Other/Unspecified Risk			
	A. Total Self-Funded			
	A. Other (=risk unknown)			

Figure 2. Enrollment Check Process, 'DHP Publication Decision'