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Data Storytelling with Design Thinking Methodology





A Guide for Overcoming User Adoption Challenges from InfoCepts'

Multi-award Winning Data Visualization Team



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Data storytelling is

a methodology for communicating information, tailored to a specific audience, with a compelling narrative

INTRODUCTION

Given our preference for stories rather than raw recitation of facts, it is no surprise that data storytelling has swiftly captured the attention of business analysts and data explorers. Data storytelling is the process of communicating tailored information to a specific audience with a compelling narrative. Higher user adoption of Business Analytics and Information Management (BA-IM) systems is a key outcome.

BA-IM solutions with adoption issues fail to cater to the complex requirements of users. Businesses that face user adoption challenges strive to provide intuitive and efficient access to the insights. Their ability to represent voluminous data visually is very critical for augmenting their users' decision-making capabilities. In such cases, it becomes extremely important to understand the challenges from the perspective of users. A deep understanding of the challenges faced by users in today's rapidly changing business environment is essential for improving user adoption.

At InfoCepts, we develop BA-IM systems using design-thinking processes to produce memorable data stories. Our experience in developing more than 1500 BI applications required overcoming an extensive range of user experience challenges. It led us to develop our proprietary data visualization methodology that combines elements of the data storytelling and design thinking.

This guide captures some integral elements of our data visualization philosophy that urges Fortune 500 customers to keep coming back.

TO EMPATHIZE



DECODING USER CHALLENGES WITH EMPATHY STUDY

Empathy study is a methodical activity that holistically reveals all the challenges from users' perspective. Our data visualization experts frame open-ended questions that begin with What, Who, How, and Why to capture all business requirements.

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We have adopted the 'Lean Canvas' concept to make this activity more effective with a single page template for understanding stakeholder challenges with lean canvas template. The template captures elements critical for data storytelling such as Problem Statement, Project Objective, Target Users, Key Metrics, Technology Stacks, Key Project Deliverables, and Success Metrics. It prompts end users to gain a 360-degree perspective of the challenges they face when obtaining business insights. Direct interviews and joint brainstorming sessions are ideal mechanisms for generating inputs from all stakeholders. Alternatively, stakeholders with a complete view of their business needs can independently provide inputs.

Problem Statement Project Objective Target Users Key Metrics Success Metrics Top 3 Problems Strategic	LEAN CANVAS TEMPLA	IE		Project Name		Revisi	on:	Date:
Analytical Image: Constraint of the second	Problem Statement Top 3 Problems	Project Objectives	ve Tar	get Users tegic	Key Me	trics	Succes	s Metrics
Technology Stacks Operational			Anal	ytical				
		Technology Sta	icks Ope	rational	Key Del	iverables		
Milestones Risk Constraints/ Scopes	Milestones		Risk		C	onstraints/	Scopes	

Fig 1. Lean Canvas Template

CAPTURING USER PERSONA

Data storytelling requires a detailed understanding of the intended audience. A typical classification of BI users includes roles that are divided into strategic, analytical or tactical. The CEO's dashboard is fundamentally different from a sales manager's dashboard that prominently features operational KPIs. The needs, aspirations and challenges of all types of users defines their personas that warrant a detailed evaluation to improve user adoption. The detailed evaluation is also necessary to empathize with users and accordingly design the user requirements of BA-IM solutions. We have developed templates, to aid the user experience evaluation by interviewing or observing them. Here are a few template samples -



Fig 2. User Persona Template





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DEFINING BUSINESS NEEDS WITH CARD SORTING

Card sorting is a user-centered technique that is ideal for clearly articulating the desires and behaviors of BA-IM solution users. It is a valuable tool for prioritizing and organizing insights for data storytelling. Card sorting is effective for conveying a point of view by combining three aspects – user, need and insight. It provides an actionable problem statement that drives your data storytelling efforts. Here is what a typical card sorting template looks like

	MUST HAVE	GOOD TO HAVE	GOOD TO HAVE ON DEMAND	PREFER NOT TO SEE
VDI CITATA	A 1911			
Vov Attributo				
Voi Moteliec				
Timo Corioc				

Fig 3. Card Sorting Template

HOW TO USE THE CARD SORTING TEMPLATE

Team members of a card sorting activity independently produce an exhaustive list of potential analyses or reports. The list is essentially a collection of ideas populated by all team members. They may use colored sticky notes or cards to generate it.

The entire team will then have to create a cluster of common ideas together and sort them into the template's Must Have, Good to Have, Good to Have on Demand and Prefer Not to See buckets. Stakeholders can validate the need and categorization of all ideas while being mindful of the lean canvas and user personas.

The collaborative nature of this activity is instrumental in revealing the similarities and differences between multiple user groups. It provides inputs for holistically defining the business needs of the solution.

TO DEFINE



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DEFINING USER REQUIREMENTS WITH A FOUR-STEP PROCESS

The following four-step process is necessary for defining user requirements with logical arrangement of data-



1. IDENTIFY DATA SETS

This step requires conversion of categorized ideas from the card sorting activity into actual data sets



2. GROUP THE DATA

The team creates a cluster of similar reports by grouping them in logical order



3. PRIORITIZE DATA

At this stage, the team chronologically arranges data into primary, secondary and tertiary categories



4. SEQUENCE THE DATA

The process concludes with visual hierarchy led data sequencing. According to visual hierarchy, the top left section serves as a high visibility area, making it ideal for primary insights. It establishes a compelling and consistent flow for data storytelling.

A human centered approach of telling actionable stories



DISCOVERING RELATIONSHIPS & HIERARCHIES USING AFFINITY DIAGRAM

It is important to establish relationships between insights and their hierarchies to gain a 360-degree view from the highest to the lowest level. The affinity diagram enables us to gather a large amount of data and organize it into groups or common themes to serve this purpose.



The diagram aids in creating groups of information and organizing them into hierarchies.



TO IDEATE



CREATING INTERACTIVE STORIES WITH STORYBOARDING

All the above activities play a critical role in arriving at data points around which a BA-IM solution can take shape. The next step is to then begin the storyboarding process. Storyboarding is a creative process for generating, developing and communicating ideas through visuals. Its capacity to tell an interactive story through static images is indispensable for data storytelling with design thinking.

IDEATE

The first step is to build a storyboard that is a visual depiction of screens, information or actions in a sequential order. Ideation is required to execute this task with radical design alternatives that are an outcome of creativity and innovation. The aim is to build a visual narrative that revolves around users and enables them to visualize all solution complexities.

CREATE WIREFRAMES

A wireframe is a blueprint of the user interface that has minimal aesthetics. It depicts the flow of each screen, logical sequence and user interactions. A wireframe brings together all the key areas of the BI/Analytical development process: information identification, audience definition, and presentation. While creating wireframes, one should consider the lean canvas template, which aids in visualizing charts with a focus on achieving the end objective.

A successful storyboarding project lays the foundation for achieving the key solution requirements. It systematically organizes how decision makers will receive, view, and interact with essential business information. We iteratively ideate and conduct storyboarding sessions to ensure the data stories our BA-IM solutions tell are as impactful as possible.

Ideally, a storyboarding activity process should always begin with the requirement-gathering workshop involving all the stakeholders. Their contribution toward generating multiple ideas provides the opportunity to select options that are most relevant for each of them.



BRINGING DATA STORYTELLING TO LIFE WITH DATA VISUALIZATION

At this stage, the logical flow of data is ready with aspects of the data story that are most relevant to respective stakeholders. Our BA-IM specialists then begin to explore data sets for meaningful insights. They use data visualization tools to reveal patterns, relationships, and trends, while tinkering with multiple dimensions. In addition, they adopt measures to extract meaningful insights necessary for telling a compelling story.

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While tools like MicroStrategy provide advanced visualization capabilities, a mature understanding of data visualizations is necessary to make the most appropriate choices. (Get in touch with an InfoCepts Data Visualization expert today)

HIGHLIGHTING IMPORTANT STORY POINTS

Pre-attentive attributes play an important role in effectively communicating information by highlighting key points in data visualizations. They are significant for encouraging users to focus on the most important information quickly. Visual changes that create a clear demarcation from other data points are effective for this purpose. There are 12 types of pre-attentive attributes, which require judicious handling to highlight actionable insights without taking user attention away from essential information. The attributes go beyond charts and visualizations to accentuate specific sections, text, and tables of a solution.



NARRATING DATA STORIES

Data storytelling is a combination of data, visuals and narration. Narration is an important final aspect of data storytelling. In an interactive setting, it occurs in the form of verbal communication by a subject matter expert using data visualizations as prompts. In a self-service environment, narration takes a textual form to communicate business insights clearly.

TO DESIGN

ALL SCREENS MOCKUPS















Data Storytelling with Design Thinking

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DESIGNING THE SOLUTION

User interface design and user experience design expertise is essential for improving the user adoption of BA-IM solutions. Most users expect business solutions to have the same level of interaction and experience as consumer applications. Fortunately, MicroStrategy's UI framework is compatible with graphical elements like image transparency, gradience and free-flowing forms. Also, MicroStrategy supports the import and export of graphics files in PNG, JPEG, and other standard visual formats. These features enable data visualization experts to explore multiple creative options for enhancing user experience. Our experts create static designs of BA-IM solutions using design tools like Adobe Creative Suite.

Our data visualization experts are adept at creating designs that look and feel exactly as they would in MicroStrategy due to their hands-on knowledge with the MicroStrategy platform. They ensure that corporate logo and brand identity standards such as color palettes, fonts, graphics, and so on are in place. During this phase, our experts' recommendations about optimally using available screen space for facilitating good information flow come to life. As a result, users can see the final output without using BI tools that require considerable time and efforts.



Fig 4. CIO Portfolio





PROTOTYPING

Prototyping is an activity that aims to make your ideas and explorations more tangible. The expertise of a user interface designer is crucial to create the prototype of a BA-IM solution. The designer's ability to create a prototype that users can experience and interact with has decisive implications. Professional prototyping tools that eliminate ambiguity, assist in ideation and reduce miscommunication enable designers to create prototypes.

Prototypes are ideal for resolving disagreements and sparking different conversations with users. More importantly, they make room for testing several ideas without investing significant time and money. It provides a safety net that allows an entire approach to fail without having to worry about major consequences. A solution prototype enables users to experience a real BI application without committing to one.

From empathizing with users to prototyping a solution, our data visualization methodology keeps the customer at the center. It combines the structured practice of design thinking with data storytelling to overcome user adoption challenges holistically. Our proprietary methodology provides a systematic mechanism to fail early and fail often to arrive at a highly effective solution. A solution that tells users data stories they can appreciate and remember.



Scan this QR code or log on to https://microstrategyworld2019.infocepts.com to get access, for the template and artefacts for your next data storytelling project.

For more information visit www.infocepts.com or write to - sales@infocepts.com



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