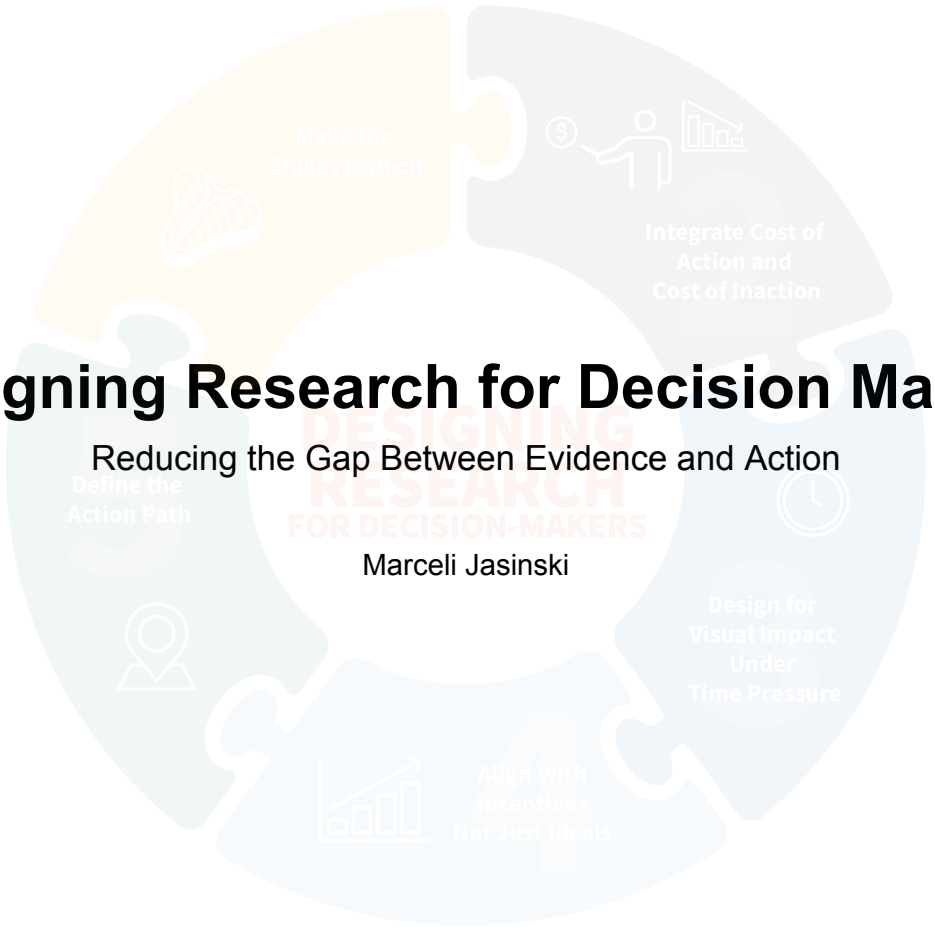


Designing Research for Decision Makers

Reducing the Gap Between Evidence and Action

Marceli Jasinski

Abstract/Summary

Organizations regularly invest time and resources into research, analysis, and user studies. Yet documented cases across industries show that credible evidence often fails to meaningfully influence final decisions. This project examines why that breakdown occurs. Drawing on cases such as the Challenger disaster, Nokia's smartphone decline, Kodak's failure to pivot to digital imaging, and systemic healthcare failures, this study explores how cognitive bias, organizational culture, incentive structures, and communication practices shape how research is interpreted and acted upon.

Rather than arguing that design alone can solve systemic issues, this Capstone proposes that communication and information design are contributing leverage points. By synthesizing research from decision science, organizational theory, and information design, this project develops a practical framework for presenting research in ways that increase clarity, salience, and strategic impact.

Key Terms

Evidence Failure

A situation in which credible research or analysis exists but does not meaningfully influence final decision-making.

Normalization of Deviance

A process in which repeated exposure to risk leads organizations to treat warning signs as acceptable (Vaughan, 1996).

Organizational Silence

A condition in which individuals withhold concerns or negative information due to fear, hierarchy, or cultural pressure.

Cognitive Bias

Systematic patterns in human judgment that influence how information is interpreted (Kahneman, 2011).

Information Design

The practice of structuring and presenting information to improve clarity, comprehension, and decision-making.

Theoretical Framework

This Capstone integrates three primary areas of theory:

Decision Science

Kahneman's (2011) work on heuristics and biases demonstrates how individuals rely on mental shortcuts under uncertainty. Confirmation bias, optimism bias, and motivated reasoning influence how evidence is interpreted.

Organizational Theory

Vaughan (1996) introduced the concept of *normalization of deviance* to describe how repeated exposure to risk reshapes perception. Vuori and Huy (2016) examined how fear and hierarchy distorted communication within Nokia. Flyvbjerg (2014) documented how optimism bias and political incentives affect infrastructure planning decisions.

Information Design and Human-Centered Design

Tufte (2001) argued that visual structure affects how relationships in data are perceived.

Norman (2013) emphasized aligning systems with human cognitive processes. Together, these perspectives suggest that communication format plays a role in how evidence is received and understood.

These frameworks position design as a contributing factor in decision-making, not a singular solution.

Literature Review

Across multiple disciplines, researchers have documented situations where credible evidence was available prior to a major decision, yet failed to meaningfully influence the outcome. What makes these cases significant is that the failure was rarely due to missing data or technical incompetence. Instead, breakdowns occurred in interpretation, framing, organizational culture, and decision authority. The evidence existed. The problem was how it was received, structured, and translated into action.

The Space Shuttle Challenger disaster was one of the most tragic examples. In her detailed investigation, Vaughan (1996) shows that engineers at Morton Thiokol raised concerns the night before launch about O-ring performance in cold temperatures. They presented historical flight data documenting previous O-ring erosion. However, the charts were organized by mission sequence (See Figure 1) rather than by temperature, (See Figure 2) which obscured the relationship between colder launches and greater seal damage. During the teleconference, NASA managers asked engineers to prove that cold temperatures would cause catastrophic failure. The burden shifted from demonstrating elevated risk to proving certainty. Under schedule pressure and institutional expectations, the absence of absolute proof was interpreted as acceptable risk.

Vaughan (1996) describes this process as the “normalization of deviance,” where anomalies that do not immediately result in disaster gradually become redefined as normal. The engineers’ concerns were documented. The data were present. Yet the structure of the presentation, combined with hierarchy and launch pressure, allowed the warning to be reframed as inconclusive rather than urgent.

Edward Tufte (2001) later analyzed how the data were visually communicated. He argued that had the temperature-to-damage relationship been displayed in a simple scatterplot, the pattern would have been visually obvious. Instead, fragmented tables and summary slides (figure 1) diluted the relationship between cold weather and seal failure. This critique is central to the present study: information design is not neutral. The way data are structured can either surface risk clearly or unintentionally conceal it.

Flight or Motor	Date	(Solid Rocket Booster)	Joint/O-Ring	Pressure (psi)		Erosion	Blow-by	Joint Temp °F
				Field	Nozzle			
DM-1	07/18/77	-	-	NA	NA	-	-	84
DM-2	01/18/78	-	-	NA	NA	-	-	49
DM-3	10/19/78	-	-	NA	NA	-	-	61
DM-4	02/17/79	-	-	NA	NA	-	-	40
QM-1	07/13/79	-	-	NA	NA	-	-	83
QM-2	09/27/79	-	-	NA	NA	-	-	67
QM-3	02/13/80	-	-	NA	NA	-	-	45
STS-1	04/12/81	-	-	50	50	-	-	66
STS-2	11/12/81	(Right)	Aft Field/Primary	50	50	X	-	70
STS-3	03/22/81	-	-	50	50	NA	NA	80
STS-4	06/27/82	Unknown: hardware lost at sea		50	50	NA	NA	80
DM-5	10/21/82	-	-	NA	NA	-	-	58
STS-5	11/11/82	-	-	50	50	-	-	68
QM-4	03/21/83	-	Nozzle/Primary	NA	NA	X	-	60
STS-6	04/04/83	(Right)	Nozzle/Primary	50	50	([1])	-	67
		(Left)	Nozzle/Primary	50	50	([1])	-	67
STS-7	06/18/83	-	-	50	50	-	-	72
STS-8	08/30/83	-	-	100	50	-	-	73
STS-9	12/28/83	-	-	100[2]	100	-	-	70
STS 41-B	02/03/84	(Right)	Nozzle/Primary	200	100	X	-	57
		(Left)	Forward Field/Primary	200	100	X	-	57
STS 41-C	04/06/84	(Right)	Nozle/Primary	200	100	X	-	63
		(Left)	Aft Field/Primary	200	100	([3])	-	63
		(Right)	Igniter/Primary	NA	NA	-	X	63
STS 41-D	08/30/84	(Right)	Forward Field/Primary	200	100	X	-	70
		(Left)	Nozzle/Primary	200	100	X	X	70
		(Right)	Igniter/Primary	NA	NA	-	X	70
STS 41-G	10/05/84	-	-	200	100	-	-	67
DM-6	10/25/84	-	Inner Gasket/Primary	NA	NA	X	X	52
STS 51-A	11/08/84	-	-	200	100	-	-	67
STS 51-C	01/24/85	(Right)	Center Field/Primary	200	100	X	X	53
		(Right)	Center Field/Secondary	200	100	([4])	-	53
		(Right)	Nozzle/Primary	200	100	-	X	53
		(Left)	Forward Field/Primary	200	100	X	X	53
		(Left)	Nozzle/Primary	200	100	-	X	53
STS 51-D	04/12/85	(Right)	Nozzle/Primary	200	200	X	-	67
		(Right)	Igniter/Primary	NA	NA	-	X	67
		(Left)	Nozzle/Primary	200	200	X	-	67
		(Left)	Igniter/Primary	NA	NA	-	X	67
STS 51-B	04/29/85	(Right)	Nozzle/Primary	200	100	X	-	75
		(Left)	Nozzle/Primary	200	100	X	X	75
		(Left)	Nozzle/Primary	200	100	X	-	75
DM-7	05/09/85		Nozzle/Primary	NA	NA	X	-	61
STS 51-G	06/17/85	(Right)	Nozzle/Primary	200	200	X[5]	X	70
		(Left)	Nozzle/Primary	200	200	X	X	70
		(Left)	Igniter/Primary	NA	NA	-	X	70
STS 51-F	07/29/85	(Right)	Nozzle/Primary	200	200	([6])	-	81
STS 51-I	08/27/85	(Left)	Nozzle/Primary	200	200	X[7]	-	76
STS 51-J	10/03/85		-	200	200	-	-	79
STS 61-A	10/30/85	(Right)	Nozzle/Primary	200	200	X	-	75
		(Left)	Aft Field/Primary	200	200	-	X	75
		(Left)	Center Field/Primary	200	200	-	X	75
STS 61-B	11/26/85	(Right)	Nozzle/Primary	200	200	X	-	76
		(Left)	Nozzle/Primary	200	200	X	X	76
STS 61-C	01/12/86	(Right)	Nozzle/Primary	200	200	X	-	58
		(Left)	Aft Field/Primary	200	200	X	-	58
		(Left)	Nozzle/Primary	200	200	-	X	58
STS 51-L	01/28/86			200	200			31

Figure 1: Chart shows “the O-ring erosion/blow-by problem was infrequent” (NASA. 1986)

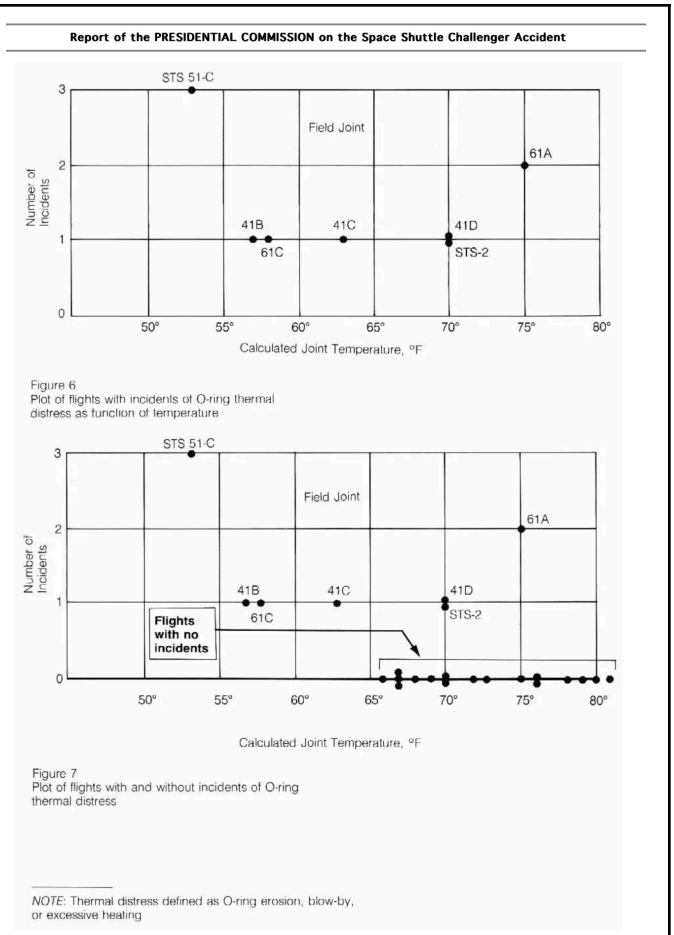


Figure 2: Revisualised chart from the Presidential Commission on the space shuttle challenger accident. One can extrapolate much more easily the possible outcome and risk associated with temperatures on the day of the final launch which were around 36˚F even though the chart cuts off at 50˚F.

The Challenger case is not an isolated incident tied to aerospace engineering. Similar structural patterns appear in large-scale organizational and strategic decision-making. Flyvbjerg (2014) analyzed major infrastructure projects and found systematic underestimation of cost and overestimation of benefits.

However, those findings were frequently reframed in executive summaries to emphasize optimistic scenarios or treated as adjustable assumptions rather than structural constraints. Flyvbjerg attributes this not to incompetence but to optimism bias and political incentives. When evidence conflicts with strategic narratives, it is rarely rejected outright. Instead, it is softened, delayed, or deprioritized. As with Challenger, the distortion did not originate in the data collection phase. It emerged during translation, specifically in how findings were summarized and framed for decision-makers.

Healthcare systems offer another example. In *To Err Is Human*, the Institute of Medicine (2000) estimated that between 44,000 and 98,000 Americans were dying annually due to preventable medical errors in hospitals. Many of these errors involved known issues such as medication

dosage mistakes and misinterpreted handwritten orders. Research had already shown that computerized physician order entry systems could significantly reduce such errors.

Hospitals often cited implementation cost and workflow disruption as barriers to adoption. What is notable is how rarely those costs were presented alongside the financial and human costs of inaction. Preventable drug events resulted in extended hospital stays, malpractice litigation, regulatory scrutiny, and reputational damage. Yet safety analyses and financial risk assessments were often discussed in separate organizational channels. When leaders saw only the upfront implementation expense, reform appeared costly. When viewed against the cumulative cost of preventable harm, the calculation shifted. The Institute of Medicine concluded that the problem was systemic, not informational. Risk was documented, but translation into coordinated institutional action lagged.

The same translation gap appears in corporate settings, particularly during moments of technological disruption.

Kodak is frequently described as having “missed” digital photography. The history is more complex. Kodak engineers developed one of the first digital cameras in 1975, and internal research through the 1980s and 1990s projected the decline of film and growth of digital imaging. Leadership was not unaware of the trend. However, digital photography threatened Kodak’s profitable film business model. Research forecasting cannibalization conflicted with short-term revenue expectations. As Lucas and Goh (2009) argue, Kodak’s response reflected structural inertia and strategic hesitation rather than ignorance. Digital was treated as a supplement to film rather than as a full replacement. The evidence existed, but the implications required dismantling the company’s primary profit engine. The failure was strategic translation.

A similar pattern unfolded at Nokia during the rise of smartphones. Internal analyses warned that Nokia’s software ecosystem was falling behind competitors. Engineers and mid-level

managers identified weaknesses in user experience and operating system integration. Yet senior leadership maintained outward confidence and downplayed internal instability. Vuori and Huy (2016) found that fear and emotional dynamics within the leadership structure discouraged candid communication upward. Warnings were not absent; they were softened or reframed. In both Kodak and Nokia, evidence about market direction existed before decline. The failure occurred during translation from internal research to decisive strategic pivot.

Unlike Challenger, these cases did not produce immediate catastrophe. They unfolded gradually. But the stakes were existential. Market share eroded. Competitive advantage collapsed. Paradigms shifted and entire business models became obsolete.

The translation gap also appears in educational systems. Decades of cognitive science research have demonstrated the importance of explicit phonics awareness and systematic phonics instruction in early reading development. The National Reading Panel (National Institute of Child Health and Human Development, 2000) reviewed hundreds of studies and concluded that structured literacy approaches produce measurable improvements in reading outcomes.

Despite this, many districts and teacher preparation programs continued to focus on balanced literacy models. As Seidenberg (2017) argues, the gap between research and classroom practice was not caused by a lack of evidence but by institutional tradition, pedagogical philosophy, and curriculum investment. Adopting structured literacy approaches required retraining, new materials, and shifts in professional identity. Research that conflicted with established instructional narratives faced resistance. Once again, the research base was strong. Translation into practice was uneven.

Administrative feedback from a senior higher education administrator (Mentor Communication, February 2026) further reinforces this translation gap. Institutional research initiatives are frequently conducted through committee structures, producing detailed reports and

recommendations. However, implementation often depends on funding allocations that are not guaranteed. When recommendations require new resources, they may stall despite agreement on their validity. In some cases, initiatives such as structured curricular pathways are adopted in principle but undermined by operational realities, including course cancellations driven by enrollment thresholds. These disruptions weaken the intended sequencing and dilute the projected impact on student completion.

The same administrator noted that assessment reporting requirements have expanded significantly in recent years, requiring recurring program-level and course-level evaluations (personal communication, February 2026). While these processes generate substantial documentation, they also increase administrative burden. Faculty may continuously adapt instruction informally, yet formal reporting cycles can consume time that might otherwise be used for curricular improvement. In this context, research translation is shaped not only by communication clarity but also by institutional capacity, resource alignment, and incentive structures.

Even when data dashboards are well designed and visually accessible, influence depends on whether findings are tied to budgetary authority or strategic prioritization (personal communication, February 2026). Without resource linkage or accountability mechanisms, research risks becoming informational rather than actionable.

Across aerospace, infrastructure, healthcare, corporate strategy, and education, the pattern remains consistent:

Evidence is produced.

Concerns are documented.

Warnings are raised.

Translation into action fails.

Cognitive psychology helps explain why these breakdowns recur. Kahneman (2011) demonstrates that human decision-making under uncertainty relies heavily on heuristics and mental shortcuts. When evidence challenges established plans, individuals are prone to confirmation bias and motivated reasoning. In organizational contexts, these tendencies are amplified by time pressure, hierarchy, and incentive structures.

Taken together, this literature suggests that evidence failure is not rare. It is a predictable outcome when complex information competes with institutional pressure and imperfect communication structures. What remains underdeveloped in this body of research is a practical framework for designing research communication in ways that anticipate these pressures. While scholars document why warnings are ignored, fewer studies examine how research outputs themselves might be structured differently to support clearer interpretation and action.

Methodology

Research Question

Why does strong research often fail to change decisions, and how can better design close that gap?

Research Approach

This project uses a qualitative case-based approach. Rather than collecting new numerical data, I analyzed documented cases across industries where credible research existed before major decisions, but failed to influence the outcome.

Data Sources

Sources include:

- Academic books and peer-reviewed journal articles
- Government and institutional reports
- Documented corporate case studies
- Research on organizational decision-making and cognitive bias

Cases were selected based on three criteria:

- There was documented research, analysis, or warning prior to the decision
- The breakdown occurred during interpretation, framing, or executive translation
- The case was supported by credible academic or institutional sources

Analytical Approach

Each case was reviewed to identify where the breakdown happened. I looked for recurring patterns such as:

- How the information was structured or presented
- How it was summarized for leadership
- Whether costs and risks were separated
- Whether hierarchy filtered or softened the message
- Whether emotional or cultural pressures shaped interpretation

By comparing these patterns across cases, I developed a preliminary design-based framework focused on improving how research is communicated to decision-makers.

Limitations

This project relies on secondary sources rather than original interviews. Because it draws from multiple industries, it prioritizes identifying patterns over deep analysis within a single domain.

Findings

Across multiple disciplines and industries, breakdowns were not caused by absent evidence. Instead, patterns emerged in how information was summarized, filtered, and reframed as it moved upward. In each case, research encountered institutional pressures that reshaped its urgency.

Evidence failure follows predictable patterns:

1. Research competes with existing narratives.
2. Information becomes abstracted as it moves upward.
3. Incentives shape interpretation.
4. Cognitive bias influences reception.
5. Communication format affects salience.

Evidence does not fail solely because of its content, but because of how it is structured, framed, and interpreted within human systems.

Solution

Figure 3: Visual Framework for Designing Research for Decision-Makers

Designing Research for Decision-Makers

The data itself was rarely the problem. Breakdowns happen when research meets incentives. Leaders were not asking, “Is this accurate?” They were asking, often implicitly, “What does this mean for revenue, risk, survival, reputation, or my performance metrics?”

If research does not speak clearly to those motivations, it becomes background noise. The framework therefore requires researchers to identify the decision authority, performance metrics, and budget constraints at the outset of the project, and to structure outputs accordingly.

This Capstone proposes a practical framework for designing research reports and visualizations so they align directly with the pressures leaders actually face. In practice, this framework can be applied to executive slide decks, policy briefs, board reports, strategic dashboards, and internal research summaries before they are delivered to decision-makers.

1. Make the Stakes Explicit

Research often begins with findings. Presenting it should begin with consequences.

In Challenger, the question shifted from “Is there risk?” to “Can you prove catastrophic failure will occur?” That shift reduced urgency. The catastrophic stakes were not clearly highlighted.

In healthcare, hospitals saw the cost of implementing computerized order entry systems. They did not always see a side-by-side visualization of the financial and legal cost of preventable deaths, extended hospital stays, malpractice exposure, and regulatory penalties.

In corporate strategy, companies like Kodak and Nokia had internal research projecting disruption. What was less clearly framed was the existential cost of not pivoting. Cannibalizing a profitable product line feels risky. Losing the entire market is more risky. But those two risks were not always presented in the same frame.

The first principle of this framework is simple:

Research must clearly answer:

- What happens if we do nothing?

- What happens if we act?
- Is this a short-term cost or a long-term survival issue?
- Are lives at stake?
- Is this an incremental 10% improvement, or an existential shift?

If the decision involves safety, that must be unmistakable. If the decision involves long-term financial exposure, that must be visible. If the issue is competitive erosion, then it needs to be quantified in concrete terms. Leaders cannot weigh stakes they cannot see.

2. Integrate Cost of Action and Cost of Inaction

One recurring pattern across cases is separation. Implementation costs appear in one report, risk exposure appears in another, financial projections sit in a third document. When these remain separate, reform looks expensive and delay looks neutral.

This framework proposes that research deliverables integrate:

- Cost to implement vs.cost of inaction
- Short-term revenue impact vs. long-term exposure
- Legal and reputational risk projections
- Human cost, when applicable

For example, if a safety system costs $2 million to implement, that number should not stand alone. It should be shown next to:

- Estimated malpractice exposure
- Historical cost of adverse events
- Insurance premium impact
- Long-term operational cost

When cost-to-act is shown without cost-to-ignore, the decision skews conservative.
When both are shown together, leaders see trade-offs more clearly. This allows for a fully informed and optimal decision to be made.

3. Design for Visual Impact Under Time Pressure

Executives rarely read full reports. They scan summaries. They absorb visual cues. They make judgments quickly. In the Challenger case, Tufte argued that a simple scatterplot showing temperature versus O-ring damage would have made the pattern immediately visible. Instead, the relationship was buried in tables organized by flight sequence. On the other hand when a pattern is visually obvious, it demands the attention of the audience.

This framework emphasizes:

- Direct visual mapping of cause and effect
- Clear threshold indicators
- Highlighted anomaly conditions
- Side-by-side scenario comparisons
- Minimal fragmentation across slides

If the risk increases below 40 degrees, that threshold should be visually unmistakable.
If revenue collapses after a market shift, that curve should be impossible to ignore.

Good design reduces cognitive effort. Under pressure, reduced effort improves the chances of the research getting implemented.

4. Align With Incentives, Not Just Ideals

Research often appeals to rationality. Decisions are often shaped by incentives. Infrastructure leaders faced political pressure to approve projects. Hospital administrators faced budget constraints. Corporate executives faced quarterly earnings expectations. If research threatens short-term metrics, it will encounter resistance.

Therefore, research presentations should:

- Acknowledge trade-offs openly
- Model best and worst case projections
- Show phased implementation options
- Connect recommendations to KPI's leaders care about

If the goal is long-term viability, show the long-term trajectory. If the goal is incremental improvement, show the projected percentage change clearly. If the goal is survival, name it directly. Research that ignores incentive structures often fails to move.

5. Define the Action Path

Across cases, evidence was documented. Committees discussed it. Action stalled.

A final component of this framework is clarity of next steps:

- What specific action is recommended?
- Who is responsible?
- What timeline applies?
- What metric will determine success or failure?

Research that ends with “further study is needed” rarely changes outcomes. When it ends with a defined decision path, it increases the likelihood of movement.

Why This Framework Matters

Literature shows that evidence failure is not rare. It is predictable when:

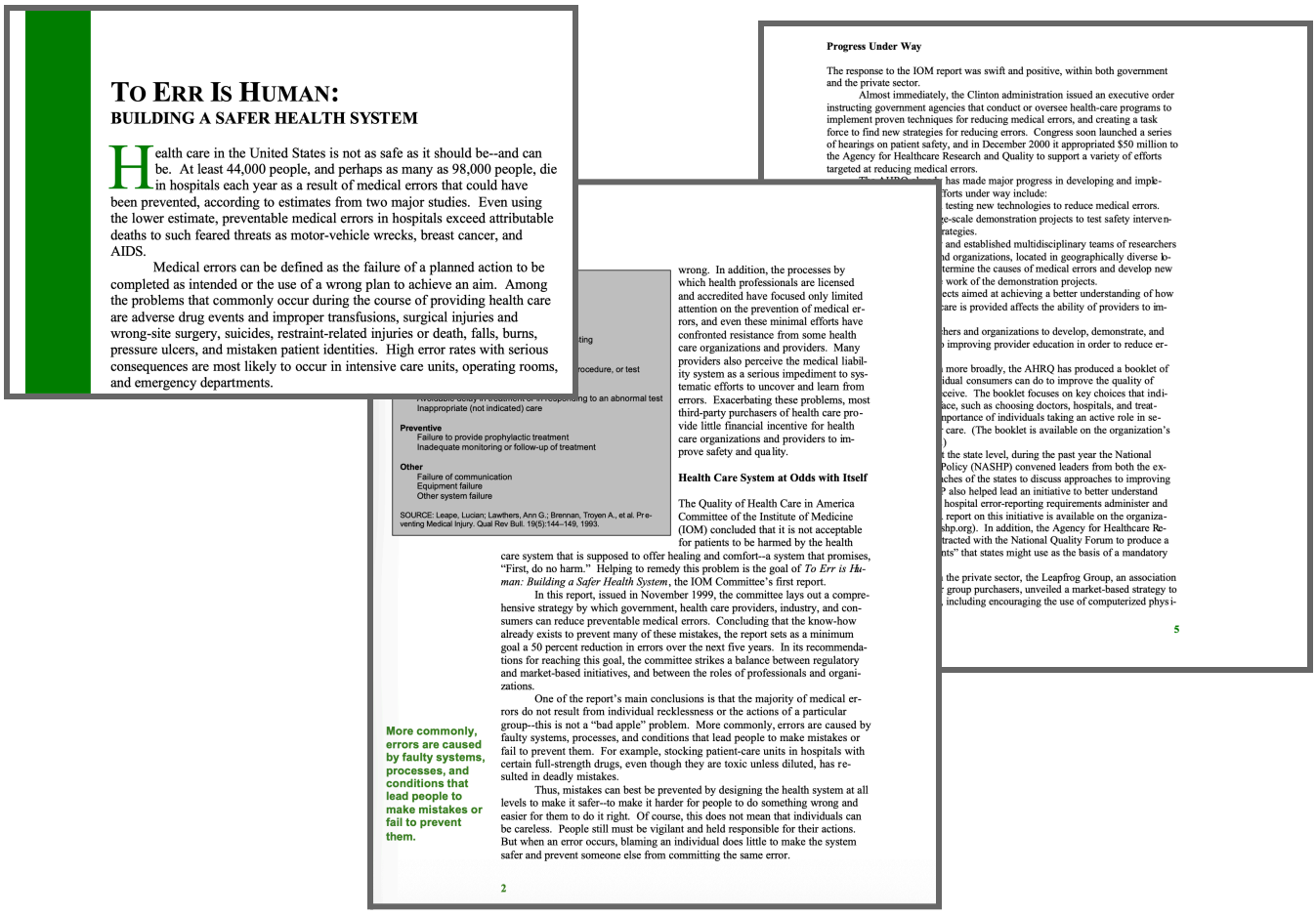
- Information is separated from stakes
- Costs are shown without exposure
- Visual clarity is weak
- Incentives are ignored
- Action steps are undefined

Information design is not cosmetic. It is structural. It shapes whether research becomes action or archive. By aligning research communication with financial realities, human consequences, and organizational incentives, this framework aims to reduce the translation gap between insight and decision.

Not every failure can be prevented. But many were not inevitable. They were shaped by how information was framed, structured, and presented. Design cannot eliminate bias or politics, but it can make critical patterns harder to dismiss.

Case Application:

Redesigning the Executive Brief of *To Err Is Human*



TO ERR IS HUMAN:
BUILDING A SAFER HEALTH SYSTEM

Health care in the United States is not as safe as it should be--and can be. At least 44,000 people, and perhaps as many as 98,000 people, die in hospitals each year as a result of medical errors that could have been prevented, according to estimates from two major studies. Even using the lower estimate, preventable medical errors in hospitals exceed attributable deaths to such feared threats as motor-vehicle wrecks, breast cancer, and AIDS.

Medical errors can be defined as the failure of a planned action to be completed as intended or the use of a wrong plan to achieve an aim. Among the problems that commonly occur during the course of providing health care are adverse drug events and improper transfusions, surgical injuries and wrong-site surgery, suicides, restraint-related injuries or death, falls, burns, pressure ulcers, and mistaken patient identities. High error rates with serious consequences are most likely to occur in intensive care units, operating rooms, and emergency departments.

Progress Under Way

The response to the IOM report was swift and positive, within both government and the private sector.

Almost immediately, the Clinton administration issued an executive order instructing government agencies that conduct or oversee health-care programs to implement proven techniques for reducing medical errors, and creating a task force to find new strategies for reducing errors. Congress soon launched a series of hearings on patient safety, and in December 2000 it appropriated $50 million to the Agency for Healthcare Research and Quality to support a variety of efforts targeted at reducing medical errors.

...has made major progress in developing and imple-
...forts under way include:
...testing new technologies to reduce medical errors.
...e-scale demonstration projects to test safety interven-
...rategies.
...and established multidisciplinary teams of researchers
...nd organizations, located in geographically diverse lo-
...termine the causes of medical errors and develop new
... work of the demonstration projects.
...ects aimed at achieving a better understanding of how
...are is provided affects the ability of providers to im-
...hers and organizations to develop, demonstrate, and
...improving provider education in order to reduce er-
... more broadly, the AHRQ has produced a booklet of
...idual consumers can do to improve the quality of
...ceive. The booklet focuses on key choices that indi-
...ace, such as choosing doctors, hospitals, and treat-
...portance of individuals taking an active role in se-
... care. (The booklet is available on the organization's
...)
...t the state level, during the past year the National
...Policy (NASHP) convened leaders from both the ex-
...aches of the states to discuss approaches to improving
...P also helped lead an initiative to better understand
... hospital error-reporting requirements administer and
... report on this initiative is available on the organiza-
...shp.org). In addition, the Agency for Healthcare Re-
...tracted with the National Quality Forum to produce a
...nts" that states might use as the basis of a mandatory
... the private sector, the Leapfrog Group, an association
... group purchasers, unveiled a market-based strategy to
..., including encouraging the use of computerized physi-

5

...ting
...rocedure, or test
...Inappropriate (not indicated) ...to an abnormal test
Inappropriate (not indicated) care

Preventive
Failure to provide prophylactic treatment
Inadequate monitoring or follow-up of treatment

Other
Failure of communication
Equipment failure
Other system failure

SOURCE: Leape, Lucian; Lawthers, Ann G.; Brennan, Troyen A., et al. Preventing Medical Injury. Qual Rev Bull. 19(5):144--149, 1993.

wrong. In addition, the processes by which health professionals are licensed and accredited have focused only limited attention on the prevention of medical errors, and even these minimal efforts have confronted resistance from some health care organizations and providers. Many providers also perceive the medical liability system as a serious impediment to systematic efforts to uncover and learn from errors. Exacerbating these problems, most third-party purchasers of health care provide little financial incentive for health care organizations and providers to improve safety and quality.

Health Care System at Odds with Itself

The Quality of Health Care in America Committee of the Institute of Medicine (IOM) concluded that it is not acceptable for patients to be harmed by the health care system that is supposed to offer healing and comfort--a system that promises, "First, do no harm." Helping to remedy this problem is the goal of *To Err is Human: Building a Safer Health System*, the IOM Committee's first report.

In this report, issued in November 1999, the committee lays out a comprehensive strategy by which government, health care providers, industry, and consumers can reduce preventable medical errors. Concluding that the know-how already exists to prevent many of these mistakes, the report sets as a minimum goal a 50 percent reduction in errors over the next five years. In its recommendations for reaching this goal, the committee strikes a balance between regulatory and market-based initiatives, and between the roles of professionals and organizations.

One of the report's main conclusions is that the majority of medical errors do not result from individual recklessness or the actions of a particular group--this is not a "bad apple" problem. More commonly, errors are caused by faulty systems, processes, and conditions that lead people to make mistakes or fail to prevent them. For example, stocking patient-care units in hospitals with certain full-strength drugs, even though they are toxic unless diluted, has resulted in deadly mistakes.

More commonly, errors are caused by faulty systems, processes, and conditions that lead people to make mistakes or fail to prevent them.

Thus, mistakes can best be prevented by designing the health system at all levels to make it safer--to make it harder for people to do something wrong and easier for them to do it right. Of course, this does not mean that individuals can be careless. People still must be vigilant and held responsible for their actions. But when an error occurs, blaming an individual does little to make the system safer and prevent someone else from committing the same error.

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Figure 4: Excerpt of original IOM Report Brief

Original Framing

The Institute of Medicine's report brief for *To Err Is Human* presents its central findings in narrative form (See Figure 4). The document states that between 44,000 and 98,000 Americans die each year due to preventable medical errors in hospitals. It also estimates the associated national economic cost to be between $17 billion and $29 billion annually. These figures are

presented in paragraph format, accompanied by supporting context and policy recommendations.

The brief is academically rigorous and carefully reasoned. However, the key statistics are separated across sections and embedded within text blocks. Death estimates, financial impact, and contributing factors are not integrated into any visual summary. The document relies on narrative explanation rather than visual hierarchy to communicate urgency.

A six-page policy brief of this density likely requires 15 to 20 minutes of focused reading to fully understand. In executive settings, that amount of uninterrupted attention is rare. Initial review may last only a few minutes before priorities shift. Under those conditions, structure matters. Information that is visually organized and clearly prioritized can be understood quickly during a scan. When mortality data, financial exposure, and implementation implications are embedded in narrative text, the reader must assemble the significance on their own. Integrating these elements visually reduces that cognitive work and increases the likelihood that the findings will inform action.

Identified Translation Gaps

When evaluated through the framework developed in this study, several translation gaps emerge.

First, the stakes are numerically clear but visually diffuse. The range of 44,000 to 98,000 deaths introduces uncertainty without a visual representation of scale. The cost estimate of $17–$29 billion is presented separately, limiting immediate comparison between human and financial impact.

Second, the cost of inaction is implied rather than modeled. While the report discusses implementation challenges, it does not visually integrate the financial and operational consequences of failing to act. Executive decision-making often depends on comparative framing, particularly when large capital investments are involved.

Third, the action pathway is generalized. Recommendations are provided at a policy level, yet responsibility, sequencing, and measurable outcomes are not visually structured for rapid executive interpretation.

The result is a document that is intellectually persuasive but structurally demanding. Translation into immediate organizational action requires additional synthesis by the decision-maker.

Redesigned Executive Artifacts

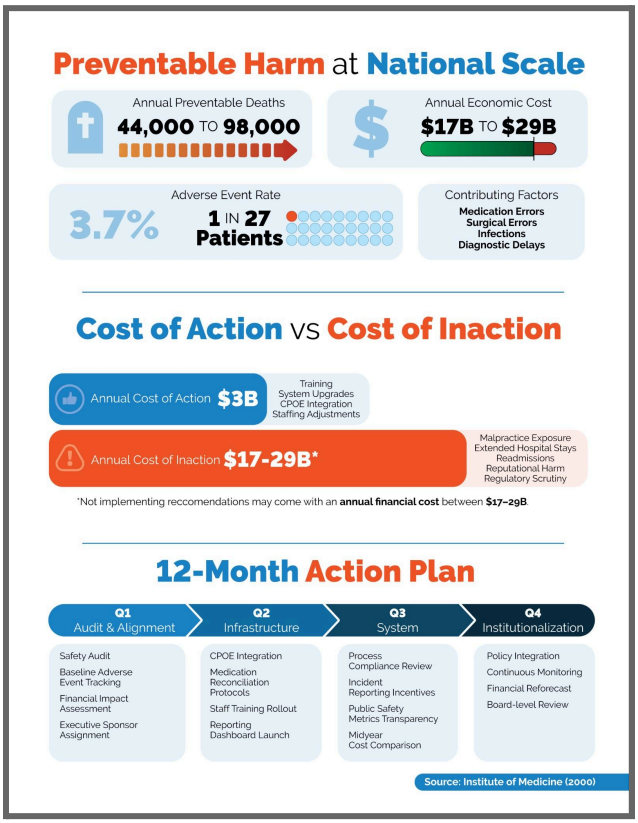

Figure 5: A redesigned executive brief derived from the original report's data. The redesign applies the five-part framework developed in this Capstone.

Above (See Figure 5) presents a redesigned executive brief derived from the original report's data. The artifact consolidates mortality estimates, economic exposure, adverse event rates, cost comparisons, and a defined action pathway into a single visual field.

Preventable deaths are displayed as a bounded range to communicate uncertainty while preserving magnitude. Economic exposure is positioned adjacent to mortality figures to establish proportional scale. The adverse event rate is translated into both percentage and ratio form to improve interpretability under time constraints.

The cost comparison integrates projected implementation investment with documented national losses, reframing safety initiatives as risk mitigation rather than discretionary expense. Instead of separating cost and consequence across narrative sections, the comparison is presented side-by-side.

The lower section outlines a structured 12-month action pathway with phased milestones and checkpoints. This sequencing shifts the artifact from awareness to decision support by clarifying what happens next.

The redesign does not alter the underlying research. It reorganizes its presentation to reduce cognitive load, increase salience, and improve the probability that evidence informs executive action.

Framework Mapping

This case application demonstrates the operationalization of the five-part framework:

1. **Make the Stakes Explicit**

   Mortality and cost exposure are visually integrated and hierarchically prioritized.

2. **Integrate Cost of Action and Cost of Inaction**

   Financial comparisons are modeled directly rather than implied.

3. **Design for Visual Impact Under Time Pressure**

   Key metrics are consolidated into structured executive slides.

4. **Align With Incentives**

   Risk exposure and financial consequences are framed in terms relevant to institutional leadership.

5. **Define the Action Path**

   Clear accountability, timeline, and performance metrics are articulated.

Through this redesign, the case illustrates how research findings can retain their academic rigor while improving executive translatability.

Implementation

This framework is designed for anyone who produces research that needs to influence a decision. That could be internal research teams, analysts, consultants, faculty, product leaders, or independent professionals. The common thread is not the industry. It is the moment where evidence has to move from documentation to action.

This framework can be implemented in three practical ways:

1. As a diagnostic tool

Before presenting findings, teams can evaluate their materials against the framework:

- Does this presentation connect directly to stakeholder motivations?
- Are financial, operational, reputational, or human risks clearly shown?
- Are long-term consequences made visible alongside short-term costs?

- Is the most critical relationship visually obvious?

If the answer to these questions is unclear, revision should occur before executive distribution. The goal is to prevent translation breakdowns before they reach leadership.

2. As a redesign process

Existing reports, slide decks, or dashboards can be reworked using the framework principles. This may include:

- Side-by-side visualization of cost-to-implement vs cost-of-inaction
- Clear depiction of risk exposure over time
- Scenario comparisons that surface existential vs incremental stakes
- Visual emphasis on what changes if action is taken versus if nothing changes

This step is especially relevant for organizations with legacy reporting formats that prioritize completeness over salience. The redesign does not remove rigor; it reorganizes emphasis.

3. As a workflow integration step

Rather than treating communication as the final formatting phase, the framework can be embedded earlier in the research process. This shifts design from aesthetic enhancement to structural strategy.

- Identifying decision-makers and their motivations at project kickoff
- Mapping findings directly to business, ethical, or strategic consequences
- Designing the presentation structure in parallel with analysis

Embedding the framework at project kickoff reduces the need for late-stage reframing and increases alignment between analysis and decision context.

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AI Assistance Statement

AI tools were used to assist with research discovery, structural outlining, language refinement, and editing for clarity. AI was not used to generate original arguments, fabricate sources, or replace critical analysis. All cited materials were independently located, reviewed, and verified by the author. The analysis, framework development, visual system, and conclusions are my own.