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Acquisition Data Practice in the Era of Digital Transformation



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Acquisition processes demand updated data practice



Realities of Acquisition Processes:

- Acquisition calls upon entire supply and demand value chain
- Crosses intra- and inter-organizational boundaries
- Local actions have global implications

Conventional data practice does not meet the challenges of contemporary acquisition processes, policy, and implementation.

- Limitations of legacy data practices can yield the death of supply chain management
- Data management solutions:
 - Bottom-up approach
 - Adopting disruptive IT infrastructure



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Realities of Acquisition Processes:

- Acquisition calls upon entire supply and demand value chain
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Conventional acquisition p

- Limitations
management

It is important to appreciate the *interconnected nature of acquisition* in order to understand and more effectively implement acquisition processes.

- Data management solutions:
 - Bottom-up approach
 - Adopting disruptive IT infrastructure



Novel data practice model for the interconnected nature of acquisition



Three fundamental perspectives applied to **acquisition data practice**

1. Practice (Bourdieu, 1990; Schon, 1985) and the practice of data work (Lee et al., 2006; Lee et al., 2014; Kwon et al., 2014)
2. Problem identification and problem solving (Von Hippel et al., 2016; Schon 1985; Lee, 2004)
3. Organizational strategy (Tanriverdi et al., 2020; Mentzer et al., 2001)



1. Practice

Fundamental practice theories and literature state that:

- There is a critical relationship between knowing & doing, interpreting & using, symbolic mastery & practical mastery
- Data quality management significantly influences big data analytics



1. Practice cont'd

Based on these studies, we define two fundamental concepts for data practice in acquisition:

1. Understand and explicitly communicate the practitioner's logic, constraints and opportunities.
2. Consider the established data practices (e.g. data quality products, data quality practice/governance, data quality management, etc.)

Understand the interconnected data & interconnected data context



2. Problem Identification & Problem Solving



Fundamental problem solving theories and literature state that:

- It is critical to identify the problem in order to solve a problem
- Properly identifying the problem allows one to efficiently engaging various stakeholders



2. Problem Identification & Problem Solving cont'd



In the context of **acquisition**, we argue that:

- It is critical to understand the interconnected nature of the problem in order to find the appropriate solution
- Doing so triggers engagement from more diverse resources and divisions



3. Organizational Strategy

In the era of digital transformation & big data, organizations must be able to adapt processes and make data-powered business decisions.

To achieve this, several issues to consider:

- Bureaucratic control, internal political/cultural constraints, external restrictions (by-products of organizational inertia)
- Trust in industry relationships
- Supply chain integration issues
- IT use in supply-chain relationships



3. Organizational Strategy cont'd



In the context of **acquisition**, we argue that:

- It is critical to consider the organizational strategy from an interconnected, strategic perspective
 - Interorganizational boundaries, relationships, trust, integration, politics & constraints
- Doing so allows organization to assess alignment between strategic goals and business processes with its data needs



Novel data practice model for the interconnected nature of acquisition



Three fundamental perspectives applied to **acquisition data practice**

1. Practice and the practice of data work
2. Problem identification and problem solving
3. Organizational strategy



Applying Acquisition Data Practice to CDO Practice



Three common questions from CDOs:

1. “How does firm know what data to collect?”
2. “What gaps exist in the data to answer questions?”
3. “How should the data be organized to support different kinds of analytics?”

Assessing these questions from a novel data practice perspective
allows us to comprehensively address interconnected acquisition
processes, policy and implementation

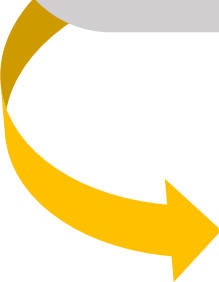


Applying Acquisition Data Practice to CDO Practice



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- 
- **I Practice**
 - **II Problem identification and problem solving**
 - **III Organizational strategy**



“How do we know what data to collect?”



I. Practice

Practitioner’s logic: *The goal is to build IT infrastructure for analytics (example).*

- By communicating goal explicitly, the answer to question can be directed explicitly towards this goal.
- Communicating explicitly allows the organization to consider whether or not this is appropriate goal for the organization, or at this time.

Without considering established data practices, one might answer this question with data items, such as customer data, product data, sales data, vendor data, etc.

However, from a data quality perspective, for example, this question can be more comprehensively answered by further asking:

Is the data **relevant**?

E.g., Did internal and external stakeholders participate in what data should be collected?

Is the data **complete**?

E.g., What is the scope of the data beyond short term needs (time horizon)?

Does the data **add value**?

E.g., Future organizational goals and strategies, for example for future data consumers?



“How do we know what data to collect?”

II. Problem identification and solving



This question would be better served if we first identify a problem which the data collected can address.

- For example, what collective inquiry does the organization have?
- Furthermore, what mechanism is in place to report and summarize that inquiry?



III. Organizational Strategy

This question would be better served by also asking, for example:

- Towards what organizational goal, and by what strategy?
 - Are stakeholders invested in this goal?
- What are the interorganizational boundaries that may limit this?
 - How will this data be shared across these boundaries?
 - Who controls the data? Who controls the data collection process?



“What gaps exist in the data?”

I. Practice



Practitioner’s logic: More explicit communication of scope and boundary – are these business questions for the organization as a whole, or for the department? Analytic questions? Short-term questions or long-term questions?

- From a data quality perspective, is the data **complete**?
E.g., *Data complete to answer explicitly communicated questions?*
- From a data quality practice perspective, who will address the gaps that exist, and is there a process and mechanism to report these gaps?



“What gaps exist in the data?”

II. Problem identification and solving



This question would be better served by identifying a specific problem and solution, for example:

- Problem identified: Which questions are we asking? Questions about vendors, customers, products, future market, etc.
- Solution identified: What kind of gaps exist? Not enough data? Difficulty in use of data?



“What gaps exist in the data?”

III. Organizational Strategy



This question would be better served by also asking, for example:

- Are these questions addressing the organizational goals or operations for specific departments?
- Are there known and unknown gaps hidden due to interorganizational boundaries?



“How should the data be organized to support different kinds of analytics?”



I. Practice

Practitioner’s logic: This type of question typically arises when data collected with originally different purposes are to be used for new purposes, typically for enhanced analysis and analytical purposes.

Thus, it is critical for the context of the data and analytics – the logic, constraints, and opportunities – to be explicitly communicated as data gets used and reused.

This question inherently focuses on data storage alone, but from a data quality perspective, the organization could also consider data consumer’s retrieval and use of the data:

- *Ease of manipulation*
- *Consistency*

Additionally, from a data quality practice perspective, for example, the organization could also consider whether there is a process or mechanism to report on data analytics needs and competency.



“How should the data be organized to support different kinds of analytics?”



II. Problem identification and solving

This question is inherently bounded to a technical problem (supporting different kinds of analytics) for a technical solution (finding ways to organize the data).

- As such, it naturally recruits IT/analytics (problem) and data (solution) experts.
- Focuses on stored data in a database or a repository.

However, data is influenced by the underlying business process and organizational strategy.

- Consider the interconnectivity of the data while identifying the problem and solution
- Consult with other experts *in addition to* data, IT and analytics experts
 - Business experts (who oversee the underlying business process and organizational strategy)
 - Data consumers (who use the results from analytics and organized data)



“How should the data be organized to support different kinds of analytics?”



III. Organizational Strategy

This question would be better served by also asking, for example:

- How do different analytic solutions address organizational strategies and goals?
- How will different analytic solutions be aligned across interorganizational boundaries?
- How will data organization influence how data consumers interact with that data?



Conclusion

Understanding acquisition in the context of three data practice concepts embraces the interconnected quality of data, which is at the heart of acquisition business processes and strategies

1. Practice and the practice of data work
2. Problem identification and problem solving
3. Organizational strategy



Conclusion - Cont'd

This novel data practice for acquisition allows organizations to:

- ✓ Comprehensively address issues across entire supply-and-demand value chain
- ✓ Identify localized acquisition action items and processes toward global intra- and interorganizational strategies
- ✓ Engage and communicate broadly on how acquisition impacts both upstream and downstream activities, resources and personnel



Future Implications

- The work described here demonstrates a powerful new approach to data practice for acquisition.
- This work paves the way for future studies examining best practices in acquisition processes, policy and implementation.



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THANK YOU!

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Methods & Data Collection

- Data collection was done, in part, in a collaborative effort by RAND research team, MIT CDOIQ Program, and Northeastern University.
- Analysis, interpretation and theory grounding are by the authors alone.



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