UNIVERSITY OF ILLINOIS AT CHICAGO Liautaud Graduate School of Business

IT / Telecom Rationalization

Department of Central Management Services, State of Illinois

IDS 515 - Field Project Report

This report was written by the following graduate students for the 2006-07 MBA/MS-MIS class 'Information Systems Strategies and Management' taught by Professor C. Ranganathan Department of Information & Decision Sciences Liautaud Graduate School of Business University of Illinois at Chicago

Phani Sasank Vajha Dept of Info & Decision Sciences University of Illinois at Chicago <u>pvajha2@uic.edu</u> Sandeep Chelliboina Dept of Info & Decision Sciences University of Illinois at Chicago <u>schell3@uic.edu</u>

Hyder Aga Dept of Info & Decision Sciences University of Illinois at Chicago <u>haga2@uic.edu</u>

Declaration

This report titled "**IT** / **Telecom Rationalization**", Department of Central Management Services (CMS), State of Illinois has been prepared in the partial fulfillment of the requirements of the IDS 515 course (Fall 2006) at the College of Business Administration, UIC. This report has been prepared based on the data that we collected through personal interviews, library research, internet research, and published articles on the companies involved. We declare that no part of this report has been directly reproduced from any of the published sources or from the internet, and sources of all direct citations and information have been duly acknowledged in our report.

Phani Sasank Vajha

Sandeep Chelliboina

Hyder Aga

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> Phani Sasank Vajha Sandeep Chelliboina Hyder Aga



Topics	Page no.
Acknowledgements	2
1. Motivation	
2. Background	
3. Technology Governance	
a. Governance Organizational Model	6
b. Governance Processes	
c. Challenges Faced	7
d. Governance Practice	
4. Optimizing the Staff	
5. Infrastructure Consolidation	
a. IT Hardware and Software Consolidation	
b. Consolidation of Telecommunication Network	9
6. Shared Services	
7. Impetus on Vendor Management and Cost Recovery	
8. Benefits of Rationalization	
a. Qualitative Benefits:	
b. Financial Benefits:	
9. Best Practices and Lessons Learned	
10. Trends in Other States	
11. Exhibits	
13. References	

Table of Contents

1. Motivation

In today's world, governments are under increasing pressure to spend taxpayers' money prudently and to improve the quality of public services. The importance of running a government like a private sector business with more accountability and responsiveness is growing. And, governments are slowly moving from a decentralized and distributed model to a more unified centrally controlled model. The State of Illinois is one such government that has transitioned from a decentralized structure to a centralized one in recent years.

In early 2003, the State of Illinois was looking for opportunities to overcome a \$5 billion deficit in its annual budget and increase the overall operational efficiency. The State was spending \$640 million on technology costs that included personnel, infrastructure and vendor costs across agencies. The information technology (IT) function operated in a decentralized mode with little co-ordination among the sub units, unnecessary duplication of hardware and software resources and higher technology costs. The problem was further intensified due to lack of an enterprise-wide governance framework and a shared information technology vision. Lack of a clear roadmap for future technology investments also increased the technology autonomy within the agencies. The situation demanded a complete overhaul of the technology governance across the state agencies. [CMS (1), NASCIO (11)]

In order to streamline the IT operations and services, reduce the operating costs and standardize the technology functions, Central Management Services (CMS) initiated an 'IT & Telecom Rationalization Program'. A roadmap was prepared for complete reorganization of existing systems, structure and processes. Although the whole process was well planned, CMS had to overcome a lot of challenges while implementing it. The fundamental change in IT governance and management was confronted with extreme resistance from all the agencies. Other issues related to budget constraints, organizational restructuring, resource and technology optimization impeded the pace of the project.

The purpose of this report is:

- To understand how technology consolidation initiatives are executed in public sector units.
- To focus on how the State of Illinois's CMS resolved significant challenges and achieved substantial cost savings and efficiencies in IT/Telecom services.
- To outline the benefits of such large scale statewide consolidation processes.
- To highlight the best practices and lessons learnt from this initiative
- To provide suitable recommendations for future strategic technology initiatives.

2. Background

The Department of Central Management Services (CMS) provides programs and services to other state agencies and to the general public. Their services range from management of employee benefits to maintaining various properties around the state. Post 2003, CMS assumed the responsibility to enhance the efficiency and cost-effectiveness of the operations of various state agencies. Coming of a five billion dollar budget deficit in the year 2003, CMS, upon the mandate from the Governor, Mr. Rod Blagojevich, carried out a number of initiatives to streamline the functioning of the State Government. CMS faced the challenge of driving away costs without raising taxes. [Tony interview (22)]

One major initiative that led to a significant amount of savings was the rationalization of the IT and Telecom resources of the State, changing from a decentralized to a centralized model. Earlier, each agency functioned independently that led to redundancy in resources and increase in costs. Dollars were spent multiple times on the same systems and the same requirements. It was then decided to move to a centralized, shared services model, where one agency would be responsible for infrastructure and common applications for all the state agencies (Exhibit 1).

To carry out its IT/Telecom re-organization initiative, CMS created a new unit, called the Bureau of Communication and Computer Services (BCCS) and engaged three consultants - Accenture, Bearing Point Inc. and Electronic Knowledge Interchange (EKI) Consulting to facilitate their transformation. Accenture was responsible for preparing a five-year IT master plan, Bearing Point worked on detailed IT inventory, and EKI focused on the telecommunication issues. CMS created a new governance model for IT. This model examined opportunities for reuse and created standards to be maintained. Later, the hardware and software resources were consolidated and centralized delivery of services through CMS commenced. In the following sections of the report, we will look in detail, how the process of rationalization was carried out.

3. Technology Governance

Prior to 2003, there was very little formal structure for managing IT. There were no standards for hardware and software, and there was little effort to understanding the ROI on IT investments by the State. Every agency of the State had its own IT unit that catered to their individual needs and benefits. There was little emphasis on cost-effectiveness and returns from IT spending. The processes became very inefficient and vendors started exploiting this situation to their own benefits. It was very much evident that the state needed a major revamp -- a centralized structure that would optimize the resources and bring in accountability to every dollar spent.

To overcome these issues, CMS proposed a new governance process in early 2004. According to CMS, "Technology Governance provides a framework for achieving cost savings related to unnecessary duplication of hardware, software and personnel resources.

It also creates a structure for demand management, permits centralized decision making, and produces reused technology assets and abilities." [Governance (8)]

Michael M.Rumman, the then Director of CMS communicated his department's intention of implementing a standard governance model to all agency Directors. He requested their participation and cooperation in establishing standard architectures for the efficient delivery of IT/Telecom services and lowering the cost of these services. He rolled out a list of objectives that CMS would strive to achieve. "They were:

- Alignment of IT/Telecom with the enterprise goals and realization of the promised benefits.
- Use of IT/Telecom to enable the enterprise to take advantage of opportunities.
- Optimize use of IT/Telecom resources.
- Management of IT/Telecom-related risks." [CMS (1)]

The governance model was created with two main components:

- Governance Organizational Model
- Governance Processes.

a. Governance Organizational Model

An organizational governance model was formed with eight functional units, viz. BCCS Deputy Director, BCCS CIO/CTO, ARB, EPMO, EA&S, Domain Owners and SMEs, Agency Relations, Agency Project Teams (Exhibit 2). Although every unit is an integral part of the whole governance model, EPMO, ARB and EA&S play a more crucial role in ensuring that the IT/Telecom investments are in alignment with the vision and goals of BCCS. These units are responsible to co-ordinate technology initiatives, implement technology standards and rationalize the business processes across the agencies.

i) Enterprise Program Management Office (EPMO)

In 2004, BCCS institutionalized Enterprise Program Management Office (EPMO), a six member group, to govern and manage the IT/Telecom rationalization and the newly established governance model. The primary function of this group is to assess the IT and telecom needs of the agencies and examine their project charters and functional requirements to ensure that the projects conform to the technology standards and business objectives of the state. [Governance (3)]

ii) Architecture Rationalization Board (ARB)

Senior IT/Telecom leaders, CIO's and Associate Directors of different state agencies were brought together to form the Architecture Rationalization Board (ARB). The objective of the board was to establish standards as well as other IT Governance Processes. [Mike Porter (9)]

iii) Enterprise Architecture and Strategy (EA&S)

In order to provide a means to move from a silos-state to a managed-state after the rationalization initiative, BCCS created a group: Enterprise Architecture and Strategy (EA&S). In 2004, EA&S developed a framework based on the Federal Enterprise Architecture Framework and created multiple taxonomies under it. This framework served as a platform to develop standards for implementing IT projects across different agencies. It consists of reference models that are utilized to establish business and technology alignment functions. Jim Mathews, CIO of BCCS, remarked, "Working in collaboration with the IT Executive Team, ARB members and Subject Matter Experts, EA&S will: help create the IT strategy and enterprise architecture vision; develop standards and reference architectures; create IT transition plans; and provide assistance to the central IT organization, as well as to individual agencies." [Governance process (15)]

b. Governance Processes

The governance process is the second and an important component of the governance model. Seven sub-processes were categorized under the governance process (Exhibit 3) to help asses the agency's IT/Telecom initiative – whether the technology is in alignment with the business objectives and architecture standards established by EA&S. Five of these processes were defined to manage the IT and Telecom application portfolio and the rest two were directed towards standards management. [Governance (3)]

c. Challenges Faced

The task of creating a governance structure was quite challenging. Very few agency CIOs understood the importance of centralized technology governance. Describing the scenario, Tony Daniels, Deputy Director, BCCS remarked, "There was no buy in from everyone. I would say that in all percentage, probably 40 or 50% CIOs got it." On the whole, IT leaders at different agencies were very skeptical about the benefits of this program and were unwilling to transfer their control to BCCS. [Tony interview (22)]

CMS dealt with this issue in a stringent manner. It mandated the agencies to participate and appreciate the value generated by this initiative. Thus, the entire transition process was considerably less problematic.

d. Governance Practice

Once the governance model was in place, CMS mandated that the state agencies should submit a project charter for any new technology initiative. It also formulated a standard procedure for submitting the project charter and getting the approval. The project proposals had to be centrally submitted. The approval and resource allocation was based on their compliance with the standard governance processes (EPMO reviews the project charter). Initiatives with multi-agency or enterprise applicability or that are not in alignment with the architecture standards, are referred to the ARB for additional review. [Governance (3)]

4. Optimizing the Staff

Another key decision made by CMS was to consolidate and rationalize its IT workforce. Carrying out the task of consolidating such a huge number of IT and Telecom resources would be extremely difficult without sufficient number of people. There was a need for people with right skills to carry out this daunting task. Some of the means of optimizing IT staff were consolidation, centralization and de-centralization. [Transformation doc (6)] Consolidation included assimilation of people from other agencies to a central BCCS unit. Centralization was physical relocation of staff, changing reporting locations and managers. De-centralization was moving staff out to satellite locations. Given the sensitivities of several people, this process met with challenges. As Tony briefed, "In any transformative initiative like this, people are what make and break the project. You can always solve technology issues because you can think through technology issues. You can't think through logically and rationally when you relate to people."

A key challenge in handling people relates to the cultural change. There were shifts in the reporting structure, changes in job profile of people and in some cases there was also a need to relocate. These changes brought in a lot of apprehensions in the minds of people. There was a growing fear and concern regarding their job security, pay scale and the new role which they would be playing. To address these issues, training sessions and orientations were held to familiarize people with the new reporting structures, functions and work practices. Also, there were documents posted across different agencies that answered questions regarding job security, change in pay scale, job relocation and such other.

Another issue for CMS was contractors, who cost the state 45% more than a state employee, formed a majority of their staff. It was decided to convert 80% of these contractors into state employees. Also, previous surveys suggested that CMS could consolidate 800 of the 1800 existing IT positions. This was a major hurdle as the headcount and budget sufficient to transfer these employees into BCCS and to convert the contractors to state employees was necessary. HR policies and procedures had to be created to support these conversions. These were some of the challenges CMS faced during optimizing the BCCS staff.

5. Infrastructure Consolidation

a. IT Hardware and Software Consolidation

While consolidating the workforce, BCCS also focused on the consolidation of IT infrastructure. BCCS with the help of technology consultants (Accenture, EKI) embarked on an extensive survey of the statewide IT establishments. They gathered detailed information about the hardware and software resources available at each agency. They realized that the IT setup at each agency was different from the other. There were different databases, different servers, different mainframes (running on multiple technologies) and different networks. Describing the situation, Tony elaborated, "Each

agency had a CIO who was responsible for application development, database programming, server maintenance, local area network and wide area network. Everyone did their own IT management; the situation was a complete mess." [Tony interview (22)] The analysis revealed that a large scale IT consolidation was imperative to obtain cost savings and improved performance.

In early 2004, BCCS initiated a complete re-organization of the existing IT infrastructure. To facilitate this process, a roadmap was drafted and emphasis was made on the necessary steps to be taken for smooth transition and stabilized IT operations. In this endeavor, BCCS retired old and dying assets, consolidated the redundant software and hardware and upgraded the older versions. The whole process resulted in successful consolidation of datacenters, email systems, applications, operating systems and help desks across the agencies.

b. Consolidation of Telecommunication Network

Prior to 2003, the State had three telecommunication networks. The first network - The Illinois Century Network (ICN) served elementary, secondary and higher educational institutions, libraries and museums for the purpose of delivering and receiving educational content. The other two carried voice and data traffic of state government over expensive networks owned by vendors like SBC. [CW honors (19)]

Most State agencies leased expensive private networks to carry their mission critical data - including police reports, unemployment data, prisoner tracking, traffic and road safety conditions and lottery results – with little co-ordination or centralization. At this juncture, CMS sensed an opportunity to utilize the State owned Illinois Century Network (ICN) to its complete potential. Tony remarked, "What we saw was an opportunity to better utilize a network that was doing a great job of providing capacity to our schools but had a lot of excess bandwidth." As a result, CMS decided to upgrade the ICN and consolidate all the mission critical data on to on one core backbone network. [Network world (20)]

It launched Project Hercules, a statewide initiative to consolidate the telecommunication network to provide faster and reliable services at reduced cost to the State agencies and its constituents. Electronic Knowledge Interchange (EKI), a technology consulting firm was given the responsibility of upgrading ICN and moving the 1600 mission critical data circuits from private networks to the in-house network. The task was quite daunting and was termed as a "logistical nightmare". ICN was upgraded with carrier-class routers and increased bandwidth to handle the extra traffic. The network was redesigned to be redundant, and it was converted to MPLS with QoS technology. And after two complete years, all the 1600 circuits were successfully moved off a frame relay network of SBC to the state's newly upgraded Illinois Century Network (ICN).

Though the entire process was meticulously planned, the execution met with many hurdles. There was a lot of apprehension among the agency IT Directors about the financial justification of the initiative. Other issues like the retirement of old assets and availability of technically skilled personnel and resistance to allow CMS to carry and manage the agencies' critical data hampered the progress to a great extent. In an effort to address these issues, BCCS organized planning retreats, brainstorming workshops, training sessions and orientation programs. They convinced the agencies that they would provide fast and secured services at lower cost. They also showed that this initiative would create more value to the core business of each agency. In addition to this, the Governor's mandate was a major driving force for the whole process. [CW honors (19)]

6. Shared Services

BCCS provides a number of shared IT/Telecom services to other agencies of the state, universities and other entities. These include Personal Information Management (PIM) services, common e-mail, local telephone service, telecommunications equipment and networking. Every employee now has an e-mail id of the form. firstname.lastname@illinois.gov. Also included in these services are master contract procurements, consultation, engineering, installation, management and such other.

CMS offers a variety of telecommunication products and services through a statewide network which comprises of voice and data line, fiber optic cables, copper cables, and Voice over the Internet Protocol (VOIP). Operating under the BCCS, shared services are handled by four different offices, viz. the **Customer Solutions Center (CSC)**, **Network Services**, the **Communications Management Center (CMC)** and **Business Services**.

Led by the Chief Operating Officer and the CSC manager, the staff of the CSC is responsible for providing consultative services and pricing information for ordering new services or equipment, managing trouble tickets (Tier 1) for voice, telephone and data repair issues during regular business hours. CSC is also given the task of using metrics to test the validity and value of all products and services it provides. [Telecomguide (26)]

The Business Services, led by the Chief Financial Officer is responsible for paying the vendors for the equipment, service and such other and bill the agencies for the products and services that they use. Under the supervision of the Chief Information Officer and the manager for Network Services, the CMC staff is responsible for "after hours" voice and data repair calls and all Tier 2 repair service.

With the implementation of the shared services, a total gross savings of \$154 million is projected over a five year period.

7. Impetus on Vendor Management and Cost Recovery

In July 2003, CMS realized the importance of IT/Telecom vendor management while finding out ways to recover unnecessary costs. Prior to that, the concept of vendor management was completely alien to the State. Each agency had their own set of vendors with exclusive contracts and rate plans. Lack of a proper communication channel between these agencies resulted in unnecessary duplication of resources and increased spending for similar services. The issue was further compounded due to the lack of a mechanism to scrutinize the billing cycles and identify the billing errors. Vendors started

exploiting this situation for their own benefits. A major contracts re-negotiation program became imperative for the Government.

In order to transform the whole scenario in favor of the State, BCCS launched a large scale IT/Telecom contracts re-negotiation and vendor reduction program. As a part of this process BCCS partnered with McKinsey to gather information from agencies and other constituents about the number of contractors, contract rates and services delivered in various areas like software development, technical support, network installation and maintenance. At the end of 2003, the survey revealed that the State had a total of 526 IT contractors and 94 of these were considered to be non-essential. Agencies were instructed not to renew those 'non-essential' contracts and to negotiate the contract rates with the rest of the contractors ('essential'). In addition to this, vendor billing practices were also scrutinized for inaccuracies for recovery of billing errors. [Deloitte (4)]

Thus, the streamlined vendor management process improved savings and enhanced the quality of services. But all this was not easy. BCCS had to overcome some roadblocks to successfully implement this project. There was lot of resistance from contractors to offer quality services at reduced costs. And the agencies were also unhappy about their loss of control in the choice of vendor.

To resolve these issues, CMS adopted a partially mandated and partially collaborative approach. Vendor's resistance was damped by a mandate and the agencies' apprehension was allayed by articulating the importance of a good vendor management process to the respective IT Directors.

8. Benefits of Rationalization

IT/Telecom rationalization has provided lot of benefits to the State of Illinois:

a. Qualitative Benefits:

- Prevention of duplication of resources and functions.
- Increase in the operational efficiency and reduction in costs.
- Alignment of technology initiatives with the business objectives and standards.
- Improvement in decision making process.
- Efficiency in vendor management practice
- Improvement in service level reliability, speed, security and cost.

b. Financial Benefits:

- Reduction in IT budgets for agencies. (Exhibit 4).
- Reduction in vendor contract costs. (Exhibit 4).

- Approximate financial savings of more than \$210 million for FY'04 & FY'05. Exhibit 5 gives a breakup of the savings obtained from the projects taken up under the whole initiative.
- Project Hercules resulted in additional savings of \$ 7 million annually.
- Return on investment: \$6.08 per every dollar spent (Exhibit 6).

However, the State had to incur some incremental costs to reap these benefits. These costs were mostly incurred for obtaining new equipment or software, vendor contracts and such other.

9. Best Practices and Lessons Learned

Based on our case study, we came up with a few best practices for consolidation and implementation of shared services in IT. They are:

Governance: In order to build an organizational structure that effectively supports the enterprise, a governance model is required. A good governance model consists of two components - formal and informal. The formal components include executive mandates, memorandums of understanding and such other, while the informal components include collaboration, culture and effective communication.

Common Objectives: For rationalization initiatives to be carried out effectively, the top management must agree on the purpose and the benefits of rationalization and shared services. These people play a key role in carrying out legislative and executive policy changes. The onus is on the CIOs to explain these common objectives throughout the organization.

Managing changes in business processes: CIOs should be knowledgeable about the changes in the business processes that are associated with a transition to a centralized mode of IT/Telecom functions. Change management should be efficiently handled by the top management because there is a shift in the mindset of people from operating as individual agencies to a central agency. People in different agencies should be trained to adapt to changes in different business processes like planning, procurement, and budgeting.

Communications: A successful consolidation and shared service initiative is based on efficient communication across the organization. This can be carried out through regular meetings and written communication between the management and the staff.

10. Trends in Other States

Like the State of Illinois, other states have come up with similar IT rationalization initiatives. Ohio developed an Enterprise Shared Services model, which co-ordinates geographical information services, electronic commerce and electronic filing services. California has come up with an initiative called "Performance Reform" to consolidate

agencies and to cut budgets. Kansas created an Information Technology Office (KITO) to develop an IT governance model that centrally manages technology initiatives of individual agencies. Michigan's IT Strategic Plan focuses on consolidation and shared services to state agencies. Likewise, other states are also setting forth visions to centralize and consolidate their business processes. [Trends (11), NASCIO (25)]

Recommendations

Based on our study, we have the following recommendations for the State's future IT/Telecom investments:

Shared services: CMS provides a number of shared services to different agencies across the State. But there is no centralized system in place for HR and accounting practices of these agencies. Currently there are 38 different payroll systems and 109 accounting systems. A centrally operated system would consolidate these different systems and streamline the administrative functions of the agencies.

Therefore, as a phase 2 of shared services initiative, CMS should embrace Enterprise Resource Planning (ERP) solutions for HR and accounting activities. A centralized ERP system would not only combine multiple systems into one but also increase the operational efficiency of the state agencies. These projects involve lot of mission critical data and therefore should be implemented in modules.

Increase the responsibility of EPMO: EPMO ensures that the projects initiated at the agency levels are in alignment with the business objectives and architecture standards. It examines and manages all the important projects. But there are a number of agency initiatives that are not examined by EPMO and hence, these projects are not in alignment with the business objectives and standards. Therefore, to avoid this situation, CMS should mandate and empower EPMO to govern all the projects initiated by the agencies.

Some important measures have to be taken before increasing the responsibility of EPMO. First of all, workforce at EPMO should be augmented – making it capable to handle increased workload. Then, a standard procedure should be formulated to ensure that all initiatives are examined and managed by EPMO.

CMM Level: Capability Maturity Model (CMM) helps an organization to standardize its processes and improve its flexibility to adapt to the changing environment. Higher the level of maturity, higher is the flexibility. In addition to this, it also increases the quality, productivity and the cost efficiency of the processes. As of now, CMS does not follow any formal maturity model.

The current rationalization program would probably place CMS at CMM Level 2. In order to improve the flexibility to changing environments, increase the quality of services and enhance the cost savings, the State should focus its future investments in adopting a formal maturity model and thereby increasing the process maturity level (CMM level).

Identify the level of activity in various initiatives: In any rationalization program, it is important to keep track of the progress of various activities undertaken. Such an approach would give us an exact status of the project and guide us in realizing the outlined objectives. Therefore, for the current IT/Telecom rationalization program to be successful, CMS should constantly identify the State's level of activity (in progress, proposed or no activity) in various consolidations and shared service initiatives.

Various services whose level of activity should be tracked along the rationalization project are Application Development, Asset Management, Billing/ Pricing Models, Payment Engine, Communications Services/ Telephony, Data Center, Desktop Management, Directory Services, Disaster Recovery, E-mail Services, Enterprise Architecture, Governance Structure, GIS, Help Desk, Identity Authentication Management, Imaging, Network, Portals, Procurement, Project Management, Security Services, Servers, and Wireless. This helps us in evaluating the progress of the project and implementing necessary steps to achieve the cost savings.

Learning from other states' experiences: Other states in the country are also implementing various initiatives to provide quality public services at reduced costs. These states are exploring different opportunities to increase the operational efficiencies of IT/Telecom services. The State of Illinois should study their initiatives and learn from their experiences. It should take precautionary measures to avoid the mistakes committed by those states.

For example: Delaware has already implemented an ERP system for HR, accounting and financial activities of the state. Illinois should refer to this initiative before embracing an ERP solution for its HR, accounting and financial practices.

Thus, these solutions would help the State to spend their IT expenditure prudently and improve the State's technology performance.

11. Exhibits

Exhibit 1



Telecom, Help Desk

Exhibit 2



Governance Organizational Model

<u>Exhibit 3</u>



Governance Processes

Exhibit 4



Savings by Category (000s)

Notes:

· The amounts presented are based on financial analysis performed by the validation team.

The financial analysis applied the savings validation approach outlined separately in this report.
The financial analysis relied on information collected from state resources and underlying documents along with assumptions that were necessary to compare Fiscal Years.





<u>Exhibit 6</u>

CMS Shared Services Program Savings Fiscal Years 2004 and 2005 combined

IT/Telecom Consolidation	
Investment	\$41 million
Savings	\$250 million
Return on Investment	\$6.08 saved for every \$1 spent

Ref: http://www.csg.org/programs/innov/documents/GovOpWinner2005-IL.pdf

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