



The Cloud Looms Over the Horizon

Field research on the feasibility of a transition
for DHTS to a revenue generating financial
model

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Overview



Background:

Duke Health Technology Solutions (DHTS) has utilized a service-based costing model for several years, accounting for evolutions and modifications along the way. However, as cost transparency tools have been implemented and enhanced IT service management have been integrated, it has become apparent that DHTS and its customer population require a financial model that is more flexible and agile.

As things stand now, it is a “one size fits all” model that currently does not serve any individual particularly well and will not empower the organization to be ready for a live service and cloud-based future.



Purpose:

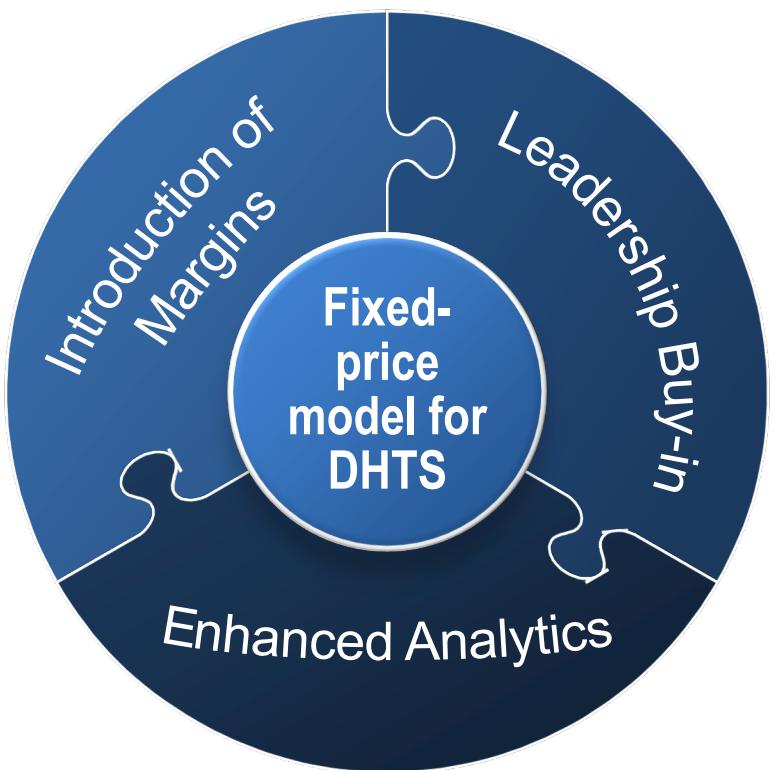
By understanding these factors, DHTS Finance has decided to take a hard look at the financial model and evaluate how it could evolve to make DHTS flexible, agile, and able to operate more like a stand-alone business. Ultimately, through alternate pricing strategies, the goal would be an alternative internal funding model that would allow for generation of revenue and pricing margins.



Scope:

To evaluate the feasibility of a model change by interviewing service owners across the enterprise. Determine risks, challenges, opportunities, and help shape the vision of a model change. Collect data, information, and research to present to senior leadership on the merits of pursuing further progress in this endeavor.

Executive Summary



- As healthcare has evolved to suit the needs of a more consumer-driven patient population, so too must the technology solutions infrastructure that supports it. At Duke, as with many other healthcare systems, the traditional financial model of paying for services with a “one size fits all” structure has shown its age and inflexibility amidst tech giants such as Apple, Amazon, and Google. Service owners inside the health system require the ability to scale up, down, and across the system based on the demand and resources allocated to them and needed by their customers. Therefore, a new financial model that would utilize service-based costing, introduction of margins, and support via enhanced financial budgeting software would best position DUHS/DHTS as a world class leader going forward into the next generation of both consumer demand and organizational efficiency.
- The new model would be a “fixed-price model,” where the service owners (SO) would be responsible for setting a unit price (that is all inclusive). By setting the price, the SOs understand the costs that influence and maintain costs to stay at or under the unit price. Apptio will be one of the main tools used to help forecast and track expenses. Unit prices will also have margin (profit) built in so that it is more than just the actual cost we incur. This margin is what will enable them to have the flexibility to manage unplanned costs, create new services, and deliver overall better customer service.

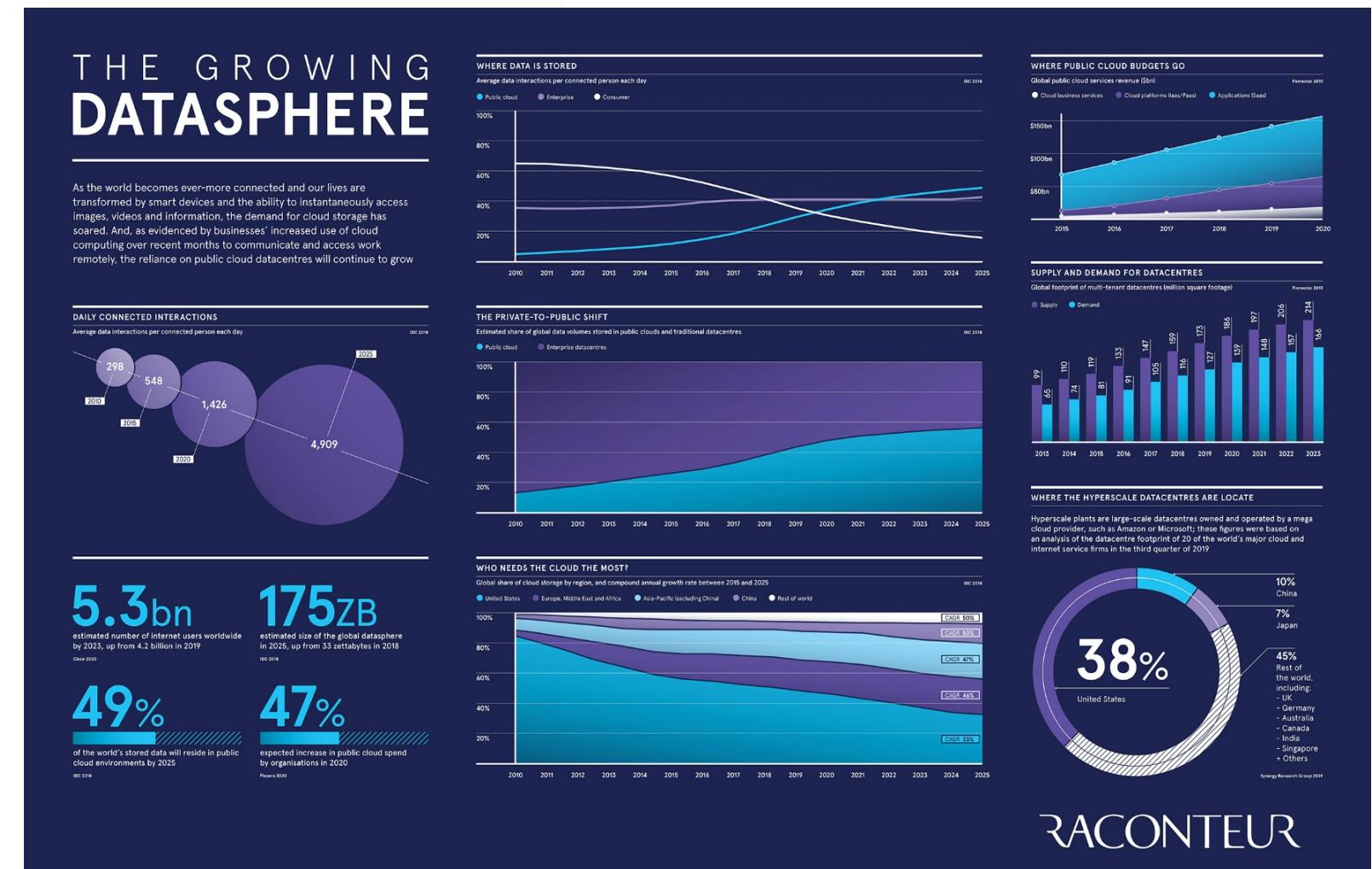


Problem Statement – Agility + Flexibility

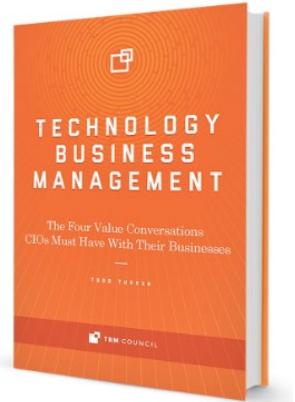
“We are going to be here in 5 years anyway, and if we don’t do something about this now, nobody will know how to manage utilization and costs will be out of control.”

– Billy Willis DUHS CTO (retired 2020)

- For DHTS to be in a position to succeed not only in the near-term, but to set the foundation for long-term success, investigation into a new financial model needs to be investigated.
- Traditionally, IT is seen as a cost center and is not supposed to operate under a revenue model. Politics have often been a barrier to change.



Source: The Visual Capitalist



Summary of Research

- Discovery sessions were conducted over a 6 month period:
 - With Service Owners across the DHTS enterprise*, outside consultants who specialize in Technology Business Management (TBM), and literature review on financial modeling as well as best practices including the Information Technology Infrastructure Library (ITIL) framework
 - 10 hours of total time spent on interviews, with almost every interview recorded and annotated
- TBM council research and review of the official literature: TBM “The Four Value Conversations CIOs Must Have With Their Businesses” by Todd Tucker
- Outside consultation with Apptio & Kaiser Permanente TBM directors
- Continuation and support from 2019 MMCi graduate Monica Card: “From Governance to Guidance: FaaS (Finance as a Service) ”

*SEE APPENDIX B



Summary of Research - Service Owner Questionnaire

1. What works well for you right now, under the current financial model?
2. What does not work well under the current financial model, what needs are not being met by it?
3. What are your biggest challenges in trying to manage costs in today's environment?
4. What are the risk and impact to you and your department by a change in model? To Duke at large?
5. Do you believe your service/department would be a good fit for an alternative model?
6. What would you like to see change, if possible?
7. How do you think you would operate differently to ensure you manage to a particular price or profit margin?
8. What kind of tools do you need in order to manage your services to a targeted price and maintain certain profit margin levels?
9. With the COVID-19 pandemic, what has your department had to do in order to meet the needs of your customers? Have you had enough resources? How has this impacted you?

Results – Key Themes from Discovery Sessions

- **What is working well?**

Evolution of Service-Based Costing and IT as Service at Duke. Quantification of services and costs. Interaction with Finance. Early impressions of Apptio. Processes can be repeated. Way to show tangible inventory. Know where costs are coming from.

- **What is not working well?**

18-month budget is not realistic in an IT setting. Culture of traditional/academic vs. a future of needing to be more agile & nimble. SO's do not know actual cost, do not have price to set, and do not have ability to change in real time. Difficult conversations with customers because of budget, pricing fluctuations, and inability to adapt or be flexible. What is source of truth? Hard to defend what you do not know. Snapshot budgeting is inflexible. Current model does not support or enable scalable IT growth.

- **Risks and challenges of model change?**

Politics. Leap of faith. Have to build trust. Downstream impacts, and what impacts lever changes have. Competing with broader market. Trying to maintain budget. Have to manage overhead. Some customers will see prices rise, others decrease. Managing relationship with School of Medicine.

- **Do you believe your service/department a good fit for an alternative model?**

Nearly universal agreement of SO's that they would be a good fit or that they would be open to learning more. MaestroCare only service with slight hesitation.

- **What would you like to see change?**

Provide guardrails. Information to manage costs. Further maturation and refinement of Apptio platform. More cooperation from Finance, and with Finance assisting – not driving. Room in budget to cover growth, growth currently just in CapEx. More discretion and flexibility in budget. Transparency. Overall, a change to fixed-price model.

- **Effect of COVID-19**

A burning platform and filter for change and priorities. I.E. Parmer and Telehealth. Forced us to look at costs, now is the time to evaluate and look inward. Refocused priorities. Overall, people have been the glue that held it together. Resources were tight, but everybody was able to do their job.

Results – The Big Picture @ Duke

- 2019 MMCi Thesis = Communication & Direction (TBM Journey)
- 2020 MMCi Thesis = Flexible & Modern (What is True & Necessary?)
 - COVID-19 → A filter and a burning platform
- An 18-month financial budget is inflexible and unrealistic.
 - By treating IT planning as a one-and-done event, the dialogue between IT, finance, and the SOs managing their service also only becomes an annual event. This should be an ongoing, flexible, and evolving conversation. By improving transparency into IT's spending, IT leaders can show the business not only where current resources are being consumed but also where they need resources to be shifted when the unexpected happens – which can often save money.
- DHTS should function as a business; building a business provides services unique to each customer.
 - We have to be more patient and customer focused. As a business we have to be more competitive.
 - However, DHTS as a business can be more closely aligned with its customers. More keen product managers. Ex: tier 1 vs. tier 5 storage
 - With ability to generate revenue: SOs could deliver better service, plan better, and expand utilization.
- Rather than “cut IT costs”, reduce consumption.
 - Pricing lets us save costs by managing those costs.
 - Ability for DHTS to “say no,” ability for entities “to say no to itself”.
 - As services grow and expand over time, ask the question: “is this add-on necessary?”.

Results – Industry Analysis

By consulting with members of Apptio, Kaiser Permanente, and TBM council, I researched what model changes have occurred in other healthcare systems or non-traditional businesses with an IT center.

- We do not see more revenue generating models in similar fields because of political reasons. IT is framed as a cost center, not a revenue model. However, as you move toward a revenue model, that you can fund innovation in a different way. Tech can receive a refresh and you can move towards the cloud. Not even in the framing of “profit,” but you can fund the “IT for the IT.”
- Cost and rate model. You need both. Cost lets you demonstrate costs of services and transparency whereas rate is more stable.
 - Under consumption-based costing, it is important to make sure that it is accurate and that customers are happy and fairly charged.
- Change in model will have winners and losers, give people time to absorb change. Highlight areas that may subsidize unevenly.
 - Currently unit prices change over time, and it creates for difficult conversations with SOs and customers. A fixed price model would allow for SOs to be consultants, empowering customers and having better overall control + flexibility over their service.
- See Appendix C for how Intermountain Healthcare completed a TBM journey, including a model change, and is now positioned to thrive in the coming years.

Measures of Success – Industry Standard

Key Performance Indicators

- Cost for Performance – Unit cost actuals vs. targets for your IT infrastructure
 - Infrastructure such as servers, storage, voice, data networks, app development, and support
 - Accounts for 60-70% of IT spend usually
 - What are spending goals, consumptions rates? Outliers?
- Unit cost actuals vs. targets for business-facing services/applications
 - The per unit cost targets for services and apps (i.e. MaestroCare)
 - Should be reviewed monthly or quarterly
 - Targets based on budgets, expected units consumed via capacity planning
- Percentage of business-facing services meeting SLAs
 - What is our value delivered?
- Satisfaction scores for business-facing services
 - How well are we serving our customers?
- Business-Aligned Portfolio – Actual spending against targets for corporate outcomes
 - How are all of our IT resources supporting business goals?
 - Total spending: CapEx + OpEx
- Actual spending against targets for business-facing applications and services
 - Where are resources actually being spent?
- Total spending against targets for each vendor category
 - Conversation about how much is spent on vendors, strategy, and what is long-term plan?
- Spending targets for TIME categories
 - Tolerate, Invest, Migrate, and Eliminate
 - Manage application lifecycles



Recommendations - Deliverable

1) Continue the journey...

- I. Phase 1: Build the foundation – Create a foundation of cost transparency while getting a better handle on costs and consumption, general ledger accounts, cost centers, and vendors. Conduct benchmarks and data collection. (first 90 days)
- II. Phase 2: Move up the stack – Focus on application total cost of ownership (TCO) and service costing. Metrics here are invaluable and will allow you to support application rationalization and help you plan around demand. Look into incorporating cloud billing data into model. Identify areas of waste, such as underutilized assets. (6-12 months)
- III. Phase 3: Connect with business – Create visibility into consumption and costs at the business unit and capability level. Set up to deliver bill of IT and shape demand. (3-6 months)

2) Define the role of Finance + Leadership

- I. SOs and IT directors need information, empowerment, and transparency. Currently they chase finance for a lot of answers to their own services and metrics. Finance should be assisting and augmenting, not driving.
- II. Strategic road map, business goals, better vendor agreements, and more frequent reviews. More conversations upfront, instead of backend.
- III. A commitment from corporate finance. A model change would fundamentally impact how DHTS does things. Can't communicate without something to communicate. Identify hurdles at corporate level, as well as optics.
- IV. A DHTS governance board, set up to govern prices. Seeded with business owners and set prices in real time.

3) Fund IT for IT

- I. See Appendix A for an example of what a model change would look like going from legacy IT to IT as a business.
- II. School of Medicine: In enterprises that price their IT services and charge for them, IT leaders can disclose the impact of any new investments on their service rates (prices) and thus have an informed discussion about impacts to the business.

4) Fully utilize the Apptio platform

- I. Train more staff on Apptio platform; as the platform gets more data, it becomes more useful. Consistency across the enterprise.
- II. Crawl, walk, run. Define your “what” and your “why”, create a use-case.
- III. Cost Transparency, IT Planning, Benchmarking, and Bill of IT services.

A leap of faith...



- *Waiting for the “right time” to start a model change is a mistake. Now is the right time to start because your business needs a cost-effective technology partner that is well-aligned to both its needs and its strategy. It needs business innovation and the agility to respond to new opportunities and challenges.*
– Technology Business Management



Resources

- Technology Business Management: Four Conversations CIO's Must Have with their Organizations, Todd Tucker (book)
- Practicum Mentor Meetings – Ekiti Lowe & Janine Oliver
- *Discovery Sessions with DHTS Service Owners – Scheduled 30m-45m interviews.
- Dr. Billy Willis, CTO DUHS (retired)
- Shamyla Lando, CTO DUHS
- Mike Lazar – Associate VP, Financial Planning & Analysis, DUHS
- Technology Business Management council & Apptio Website
- Suzanne Chartol, Apptio – Director, Customer Success Enterprise
- Joshua Greenberg, Apptio – Strategic Customer Success Advisor for Duke
- Adi Rose, Kaiser Permanente – Director, TBM
- Monica Card, MMCI – Sr Business Process Consultant, DUHS

*See Appendix B for additional information

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- Friends & Family
 - Your support was my rock, and your faith in me was my light

Appendix A – Model Change

LEGACY IT	IT AS A BUSINESS
New services and shared investments are funded by the business as capital outlays. The business in effect, buys new stuff.	New services and shared investments are funded by IT and/or corporate, and expenses are recovered through chargebacks over time based on consumption.
Projects are the center of portfolio management programs. Project resources are viewed as fungible and moved around as needed. Waterfall based planning and management is common.	Services, not projects, are the center of portfolio management programs. Investment levels are dictated by service needs. Service delivery teams are more stable. Agile and DevOps are the norm.
IT's cost structure is heavily fixed. Changes in consumption have little impact on the IT cost structure in the short term.	IT cost structure is variable. Changes in consumption directly affect the IT cost structure.
IT provides few service level choices to their business partners.	IT provides many services level choices – tiers, price, performance, etc.
IT tends to build and capitalize its services, utilizing corporate-captive resources and CapEx funding or contractors and integrators.	IT serves as a broker, sourcing new services or service components externally. Many services and components are acquired as services using OpEx dollars.
IT governs its own spending and performance, and not that of other business units. Shadow IT is not embraced and is poorly governed at an enterprise level.	IT governs the technology strategy and execution for the entire firm, including the technology services that are owned by its business partners.

Appendix B – Service Owner Interview List

- ❖ Lot Santos – Senior Director, Infrastructure & Applications Delivery
- ❖ Mick Digrazia – Director, IT Storage + Infrastructure
- ❖ Roberta Barnes – Associate CTO, DHTS
- ❖ Jeff Volkheimer – Director, Collaboration & Workforce Services
- ❖ John Bardin – Manager, Hosting Infrastructure, Storage, & Virtualization
- ❖ LaDonna Worrell – Senior IT Director, Field Services
- ❖ Dwight Smith – IT Director, Clinical Applications
- ❖ Beth Gracey – Director, Network Services & Enterprise Monitoring
- ❖ Kathy Pettiford – Senior IT Manager, Service Desk
- ❖ Gurvinder Mahajan – Senior Manager, Cloud Platforms & Database Management
- ❖ Karen Rourk – Associate CHIO, DHTS
- ❖ Kelly Riggan – Senior IT Manager, Clinical & Admin Field Svcs
- ❖ Richard DeMarco – IT Manager, Clinical & Admin Field Svcs
- ❖ Keith Holder – IT Manager, Network Support Services

Appendix C – Intermountain Healthcare Case Study

Starting in 2017, Intermountain Healthcare system started a TBM based journey to streamline IT planning and support their portfolio of services to best empower their business.

Background

- Not-for-profit system
- 22 hospitals, 185 clinics, and 1,500 employed physicians
- \$6.05B in Revenue
- 39,000+ employees

Benefits

- 95% accurate forecasting, at much reduced speeds
- \$100k of freed up expenses per year
- Better benchmarking of data going in and out
- Better governance and buy-in
- A “micro-business” mindset across Information Systems

Details

- Intermountain has long been a pioneer in the information and data technology sphere for a healthcare system. They were able to garner buy-in and strong governance for a TBM road map and system.
- They used the following roadmap for implementation:
 - ✓ Technical: determine how and from where to pull in data, and manage the functional set up
 - ✓ Operations: put processes in place around the data
 - ✓ Services: develop and manage a list of IT services
 - ✓ Governance: manage service, app, and project portfolios
 - ✓ Transparency: communicate costs and value to the organization
- Intermountain IT was referred to as a black box (like Duke is now). They created their own in-house version of an allocation model. With the TBM revamp, they created a new allocation model that more accurately captured costs and enabled better analytics and reporting of IT services.
- Intermountain is now on year 3 of their TBM journey.



Justin Waterfield

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