

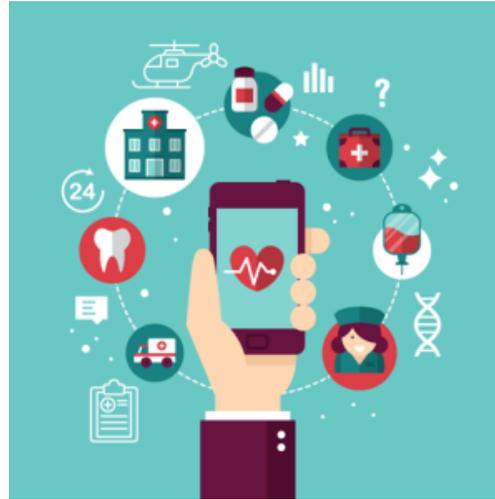
Marketplace

Initial Working DRAFT for Stakeholder Input and Refinement

Problem to be Solved (Current State)

There is tremendous opportunity to improve healthcare decisions and actions by patients and providers with digital healthcare applications; however, currently applications are challenging to find, evaluate, procure and integrate.

Additionally, Clinical Decision Support applications aren't being shared across organizations or architectures, healthcare IT expertise and staff don't have the resources to produce all the CDS interventions needed underlying all these issues is a lack of **interoperable/sharable** suite of trusted repositories/marketplaces for plug and play applications helpful to patients, providers, and health systems.



What a Solution Looks Like (Future State)

- A trusted suite of repositories/marketplaces provide "**plug and play**" applications for patients, providers, and health systems with **seamless interoperability/shareability of applications across information systems *within* marketplaces.**
- The marketplaces address application development, publication, user procurement, maintenance, billing, and payment and enables public reviews of the app.
- Application certification adheres to a "Digital Hippocratic Oath" - that includes explicit, standardized criteria to determine if an app meets quality, pricing, reliability, etc., measures
- Marketplaces provide solutions that enable clinicians to provide patient care; along with business process improvements and patient-focused applications.
- (See [here](#) for work in progress toward providing this toolset)

Tool Users/Use Cases

- Patients, providers/care teams, and CDOs can easily find, access, and integrate into systems (e.g., CDO health IT infrastructure and patient smartphones) apps they need to help with key decisions and actions (e.g., tools to support comprehensive shared care plan development, and tools to help execute care plan details, such as risk calculator tools for patients and providers (cardiovascular risk, etc.), and tools to support data capture and planning for patients around meals/exercise/monitoring (BP, weight, patient-reported outcomes, etc.) - and many, many other applications and types)

Infrastructure needed to produce tools/solve problem

- Consensus, widely adopted Reference Architecture to undergird interoperable marketplaces. For example, to run any clinical applications on different platforms, need to define and use standardized **data types/metadata/reference architecture** and profiles that more precisely represent clinical information [clarify/details?]. These run time services are critical to interconnect different systems [clarify/details?]
- Need consensus definition about what 'hippocratic oath compliant' mean; runtime characteristics, how apps are packaged/shrink-wrapped so they're portable across different runtime environment, cybersecurity, how apps are licensed (in a manner fair to developers and reasonable for health systems), etc.
- Graphite Health is building the Graphite Platform as a marketplace to serve as a cornerstone of the envisioned interoperable marketplaces. For example, they are driving development of standards for plug and play interoperability, and are working to demonstrate interoperable applications across their member organizations for HIMSS 22. They are creating detailed information models to make apps plug and play interoperable. As they do this, they provide feedback to LOINC, HL7, SNOMED, OMG/BPM+ Health etc. about gaps/inconsistencies in coding systems and value sets (including FHIR resources), etc.

- [Graphite marketplace is focused on Consumer and Provider Applications, as well as applications that support business Processes (billing, payment, operational tools)]
- From Blackford: Need to get to 'grand interoperable marketplaces' vision in an incremental fashion; requisite standard stack (data, knowledge, Smart on FHIR/CDS Hooks container standards) - read/write CQL+BPM.

Other enablers needed to solve problem

- Mechanisms such as a public-private partnership to support reference architecture development and management

Steps to address needed infrastructure / enablers - Who does what?

- Missing or defacto standards (building on current work as outlined above).
- Validating an application meets security standards required for publishing in the marketplace and use in a clinical environment
- Assuring applications have a suitable/intuitive user interface and other runtime characteristics
- Packaging applications for use in multiple runtime environments / multiple EHR environments
- Provide clear and simple application licensing information that is accessible and fair to health systems

ACTS Marketplace Workgroup Report – an in-depth look

The ACTS Marketplace Workgroup* calls for strategic investments to establish an interoperable national infrastructure for the dynamic exchange of trustworthy, computable health knowledge, and executable software (96).

This document (an appendix of the Roadmap) describes the recommended strategic foci to establish:

1. A Production marketplace system (or knowledge network) as a coordinated, public/private, vendor-neutral reference architecture and ecosystem operated in a collaborative manner with providers and industry
2. An operational network of diverse human curators and interoperable ecosystem constituents, wherein no single entity is given unfair advantage and the policies may naturally vary to support development, innovation, validation, and testing
3. Effective mechanisms to let consumers of software and content assets compare and contrast offerings and switch between alternative solutions (316), such that market forces may drive competition and innovation, rather than vendor lock-in

If successful, the future of computable healthcare will be characterized as an expedient and reliable means for discovery, curation, distribution, deployment, and measurement of knowledge artifacts across vendor and provider organizations with relatively low latency and cost. Carefully designed governance structures will instill trust and support a unified vehicle for policies.

This document is intended to seed discussion and planning for next-generation national computable health ecosystem with many functioning marketplaces within it and has been refined by the ACTS Marketplace Workgroup in collaboration with the broader ACTS Stakeholder Community (52). The remainder of this document establishes a vision for a sustainable ecosystem, gaps from current works, and participation needed to achieve it in Production HIT systems directly enabling transactional care. Resultant work has been taken into consideration for inclusion within the ACTS Roadmap deliverable.

[Read Full Report](#)

[View Workgroup Members](#). *The ACTS Workgroups formed in 2019 to analyze and report on specific areas of the Knowledge Ecosystem and LHS Cycle.

How tool(s) fit in Patient Journey

- Patients and providers/care teams interact directly with the marketplaces to find, evaluate, and procure applications, and to integrate them into their health IT systems
- Care delivery organizations also use the marketplaces to access applications that they provide to patients and care teams to access with their underlying health IT infrastructure (e.g., EHRs, patient portals, etc.)

Ecosystem Cycle Step(s) where tool is applicable

