

# HIEs: Solving the NHIN Conundrum with a Service-Based Approach

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Scenic Ukiah, CA

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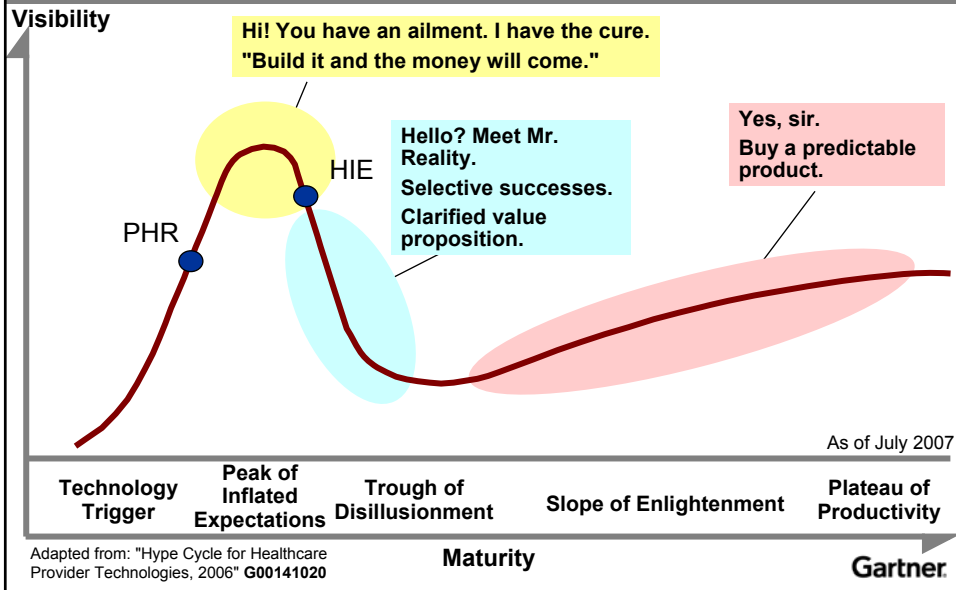
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## Disclaimer

- Although Gartner is working with the Office of the National Coordinator for Health IT on the architecture of the NHIN:
  - This presentation does not necessarily represent the position of the ONC
  - It represents my own view

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## The Gartner Hype Cycles



## Agenda



- Point of View/Background
- A Possible Vision of the Nationwide Health Information Network
- The Role of Services in the NHIN

## Agenda

- Point of View/Background

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## Self-Sustaining HIE Organizations: Indianapolis and Cincinnati

	 <b>IHIE</b> Indiana Health Information Exchange (Indianapolis)	 <b>HealthBridge</b> HealthBridge Cincinnati
Initial functions	Delivery of clinical reports to physicians	Delivery of clinical reports to physicians
Add-on lines of business	Quality data collection "EMR Light" ePrescribing Quality measures	Clinical messaging "EMR Light" Transcription
Architecture	"Edge proxy" database Transaction mapping	"Edge proxy" database Transaction mapping
Software from	Self-developed	Axlotl

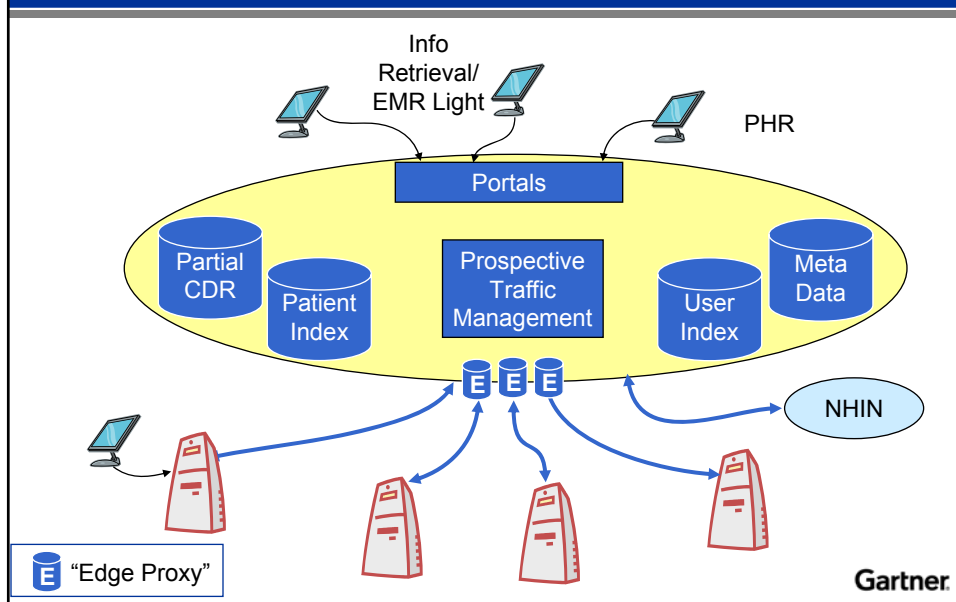
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## HIEs Will Evolve Through Predictable Stages

Benefit	Examples	Issues
reducing the friction of the patient hand-off (including referral semi-automation)	exchange of results & messages across the continuum of care ePrescribing EMR "Light"	engages docs; they will pay for it substantial dollar savings for all CDOs and providers decouples network from EMR proliferation natural expansion for independent physician associations
data collection for pay for performance	lab and therapy orders and results for specific conditions	measure-specific depends on critical mass
improve quality of care through clinical decision support	evidence-based medicine guidelines probable error flagging	workable only in a unified computer-based patient record otherwise beyond near-term interoperability

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## The Fusion HIE



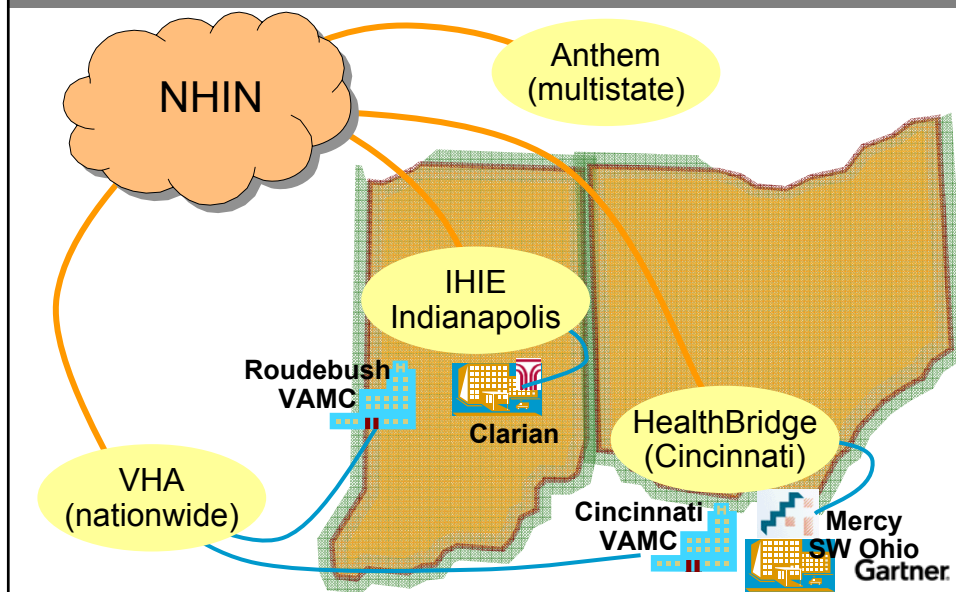
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## Agenda

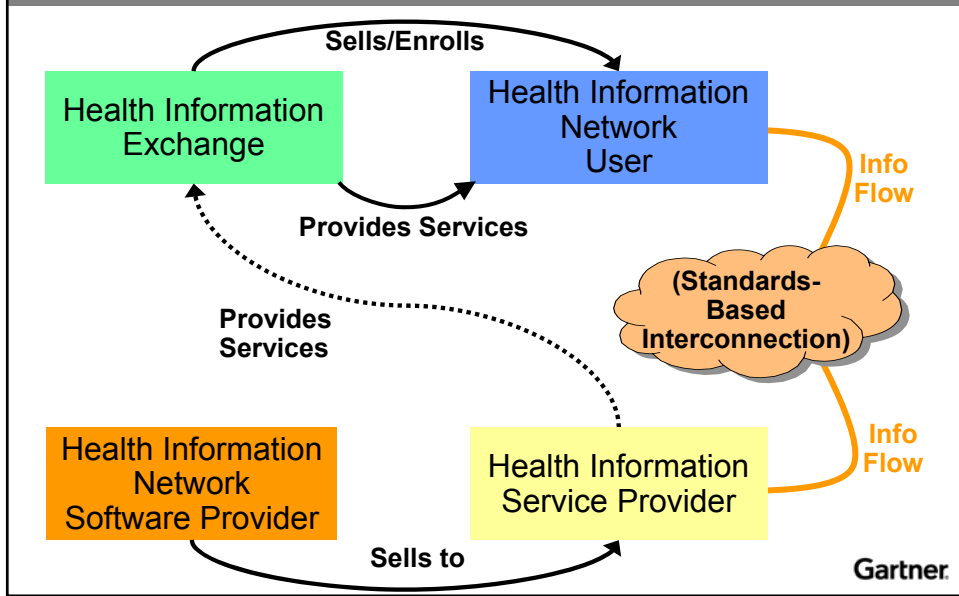
- Point of View/Background
- A Possible Vision of the Nationwide Health Information Network

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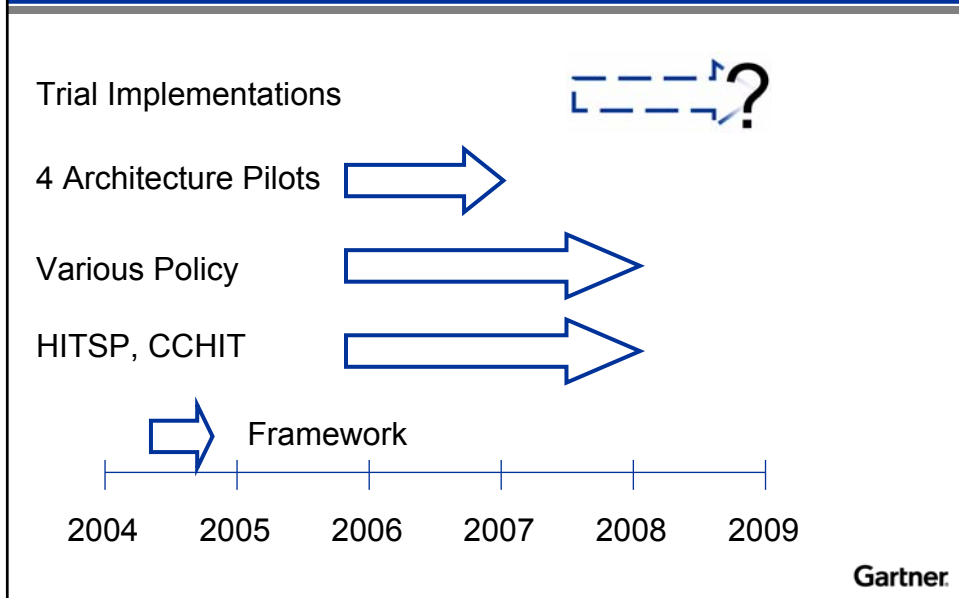
## Who Puts the 'Region' in RHIO? Not Everybody



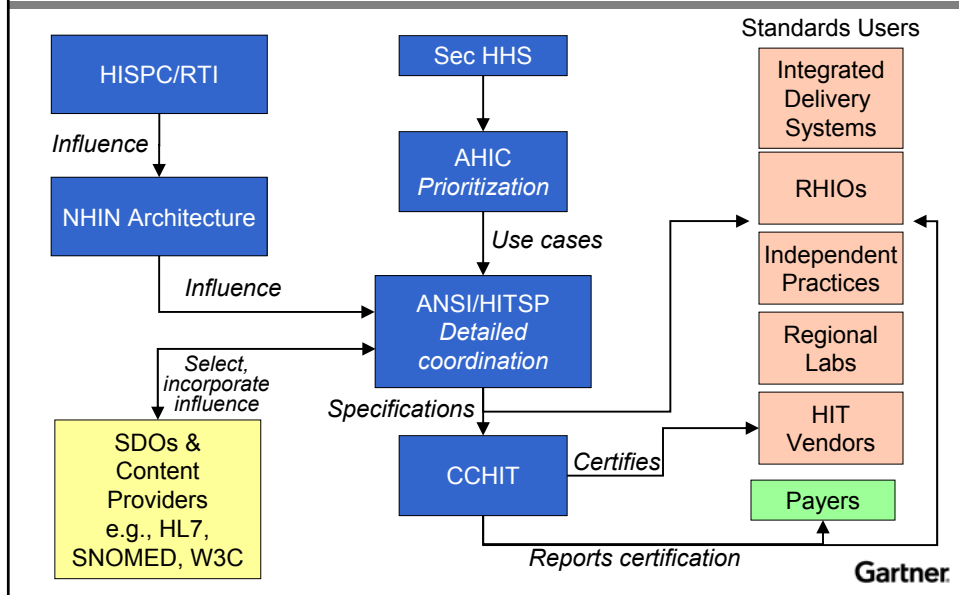
## What Is 'the NHIN'? Perhaps 'Nothing but Net'



## ONC Initiatives Towards a NHIN



## Acronymicity: ONCHIT NHIN Contracts

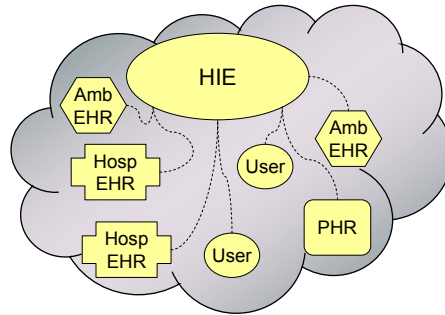


## Agenda

- Point of View/Background
- A Possible Vision of the Nationwide Health Information Network
- The Role of Services in the NHIN

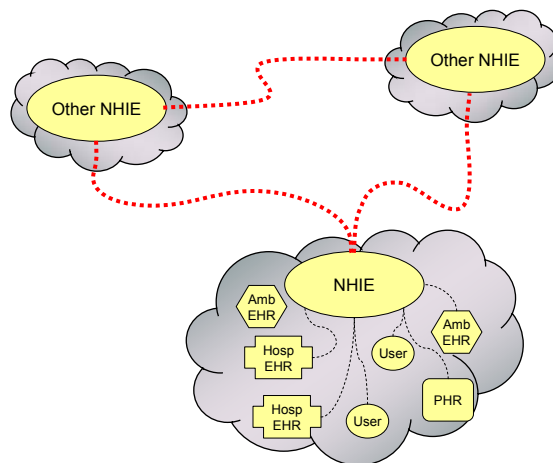
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## HIEs provide interoperability between EHR & PHR systems



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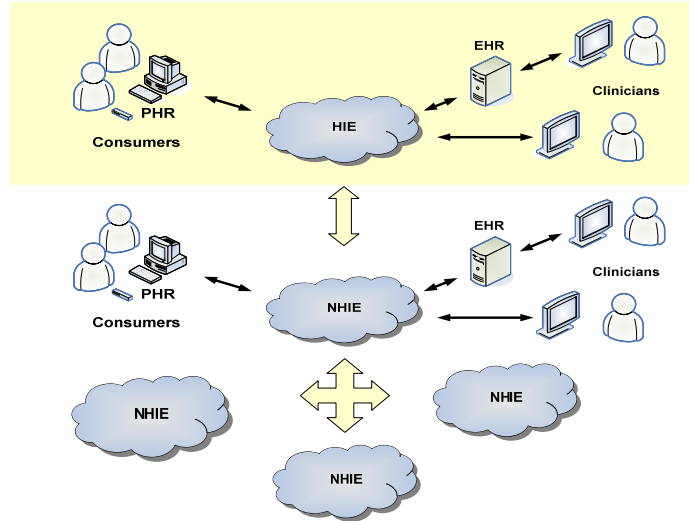
## NHIE is an HIE that uses standard interfaces and business relationship to interact with other NHIEs



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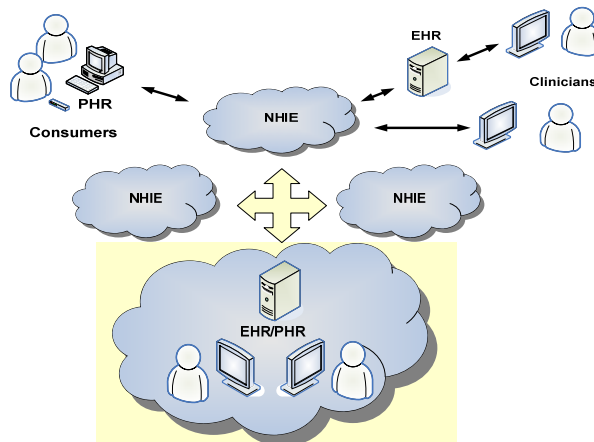
## Not All HIEs Need To Be NHIEs



Source: Adapted from ONC

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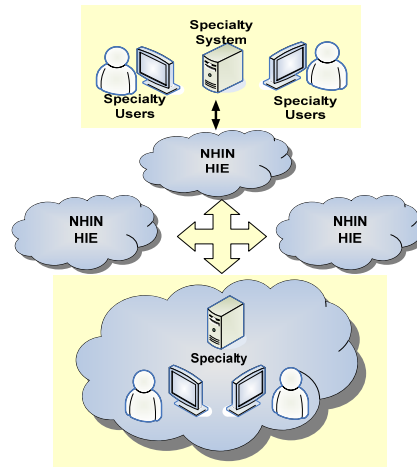
## A Multi-Regional Care-Delivery or Consumer Organization May Choose to Operate as an NHIE



Source: Adapted from ONC

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## A Specialty Organization May Participate Through an NHIE or As an NHIE Specialty Network



Source: Adapted from ONC

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## What Are the Qualities of an NHIE?

- An organization of healthcare stakeholders
- Public or private
- Trusted by all other NHIEs
- Meets technical and organizational standards
- Qualities are described as a set of **Core Services and Capabilities (included in the backup slides)**
  - Consumer Services
  - Data Services
  - User and Subject Identity Management Services
  - Management Services

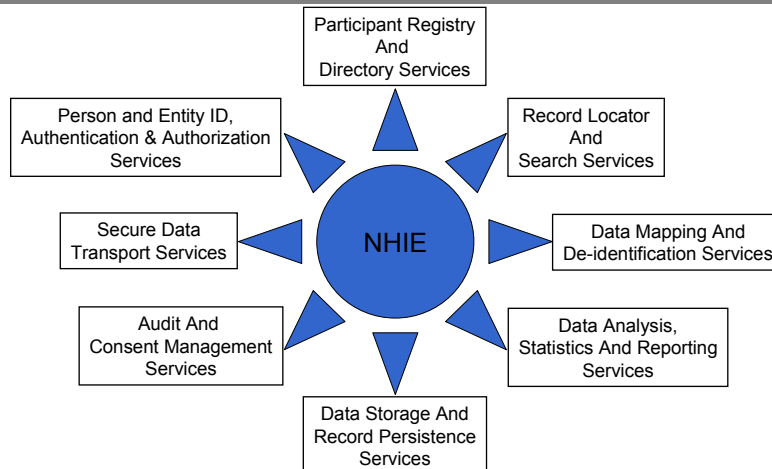
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## Important Notes on Core Services and Capabilities

- May be performed by HIE, NHIE or both
  - Example: user authentication
  - Example: “pseudonymization”
  - The buck stops with the NHIE
- Often require cross-NHIE collaboration
  - Example: finding data about a patient
  - Example: helping to locate a patient’s PHR
- Specialty networks may have circumscribed requirements
- Some core services imply computer interfaces
  - Trade-off between standards and avoiding wholesale replacement of healthcare IT systems and existing HIEs

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## NHIE Services



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## Core Services and Capabilities

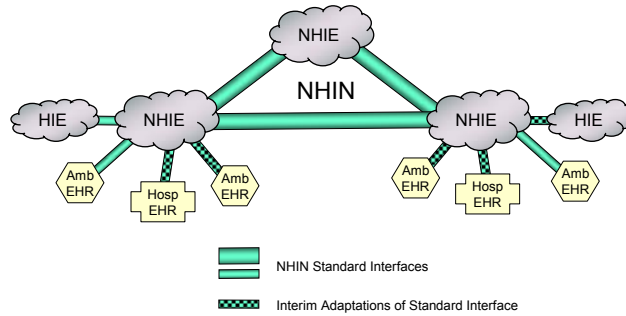
Core Services and Capabilities	
<b>Consumer Services</b>	<ul style="list-style-type: none"> <li>• Management of consumer-identified locations for the storage of their personal health records</li> <li>• Support of consumer information location requests and data routing to consumer-identified personal health records</li> <li>• Management of consumer-controlled providers of care and access permissions information</li> <li>• Management of consumer choices to not participate in network services</li> <li>• Consumer access to audit logging and disclosure information for PHR and HIE data</li> <li>• Routing of consumer requests for data corrections</li> </ul>
<b>Data Services</b>	<ul style="list-style-type: none"> <li>• Secure data delivery, and confirmation of delivery, to EHRs, PHRs, other systems and networks</li> <li>• Data look-up, retrieval and data location registries</li> <li>• Support for notification of the availability of new or updated data</li> <li>• Subject-data matching capabilities</li> <li>• Summary patient record exchange</li> <li>• Data integrity and non-repudiation checking</li> <li>• Audit logging and error handling for data access and exchange</li> <li>• Support for secondary use of clinical data including data provisioning and distribution of data transmission parameters</li> <li>• Data anonymization and re-identification as well as HIPAA de-identification</li> </ul>

## Core Services and Capabilities (cont)

Core Services and Capabilities	
<b>User and Subject Identity Management Services</b>	<ul style="list-style-type: none"> <li>• User identity proofing and/or attestation of third-party identity proofing for those connected through that HIE</li> <li>• User authentication and/or attestation of third-party authentication for those connected through that HIE</li> <li>• Subject and user identity arbitration with like identities from other HIEs</li> <li>• Management of user credentialing information (including medical credentials as needed to inform network roles)</li> <li>• Support of an HIE-level, non-redundant methodology for managed identities</li> </ul>
<b>Management Services</b>	<ul style="list-style-type: none"> <li>• Management of available capabilities and services information for connected users and other HIEs</li> <li>• HIE system security including perimeter protection, system management and timely cross-HIE issue resolution</li> <li>• Temporary and permanent de-authorization of direct and third-party users when necessary</li> <li>• Emergency access capabilities to support appropriate individual and population emergency access needs</li> </ul>

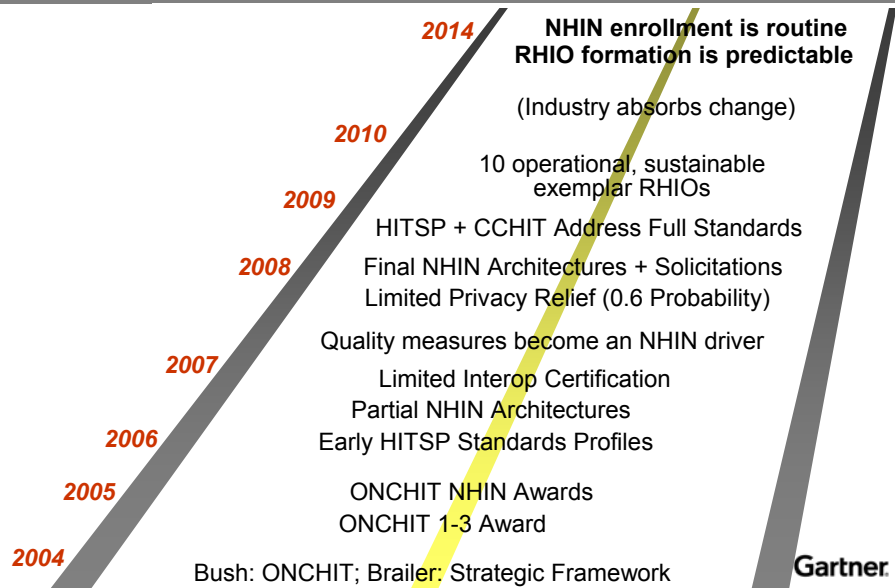
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## Standard Interfaces Are the Basis for NHIE Interoperability



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## Optimistic Timing for the Plateau of Productivity



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## Fundamental Futurology: Hurry Up and Wait

“We always overestimate the change that will occur in the next two years and underestimate the change that will occur in the next ten.

“Don’t let yourself be lulled into inaction.”

- Bill Gates

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