



Inforoute  
Santé  
du Canada

Canada  
Health  
Infoway



# In Search of the Holy Grail

One Year Later

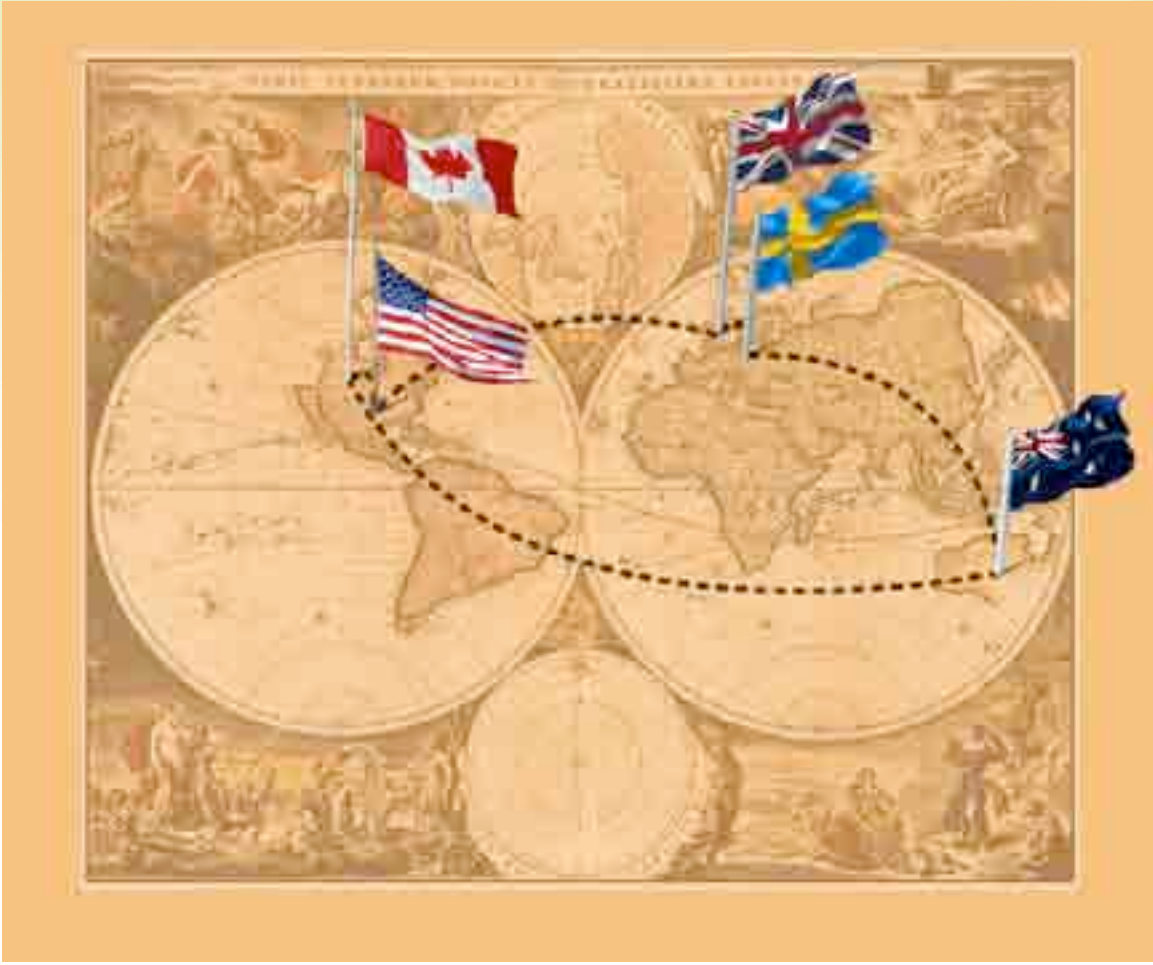
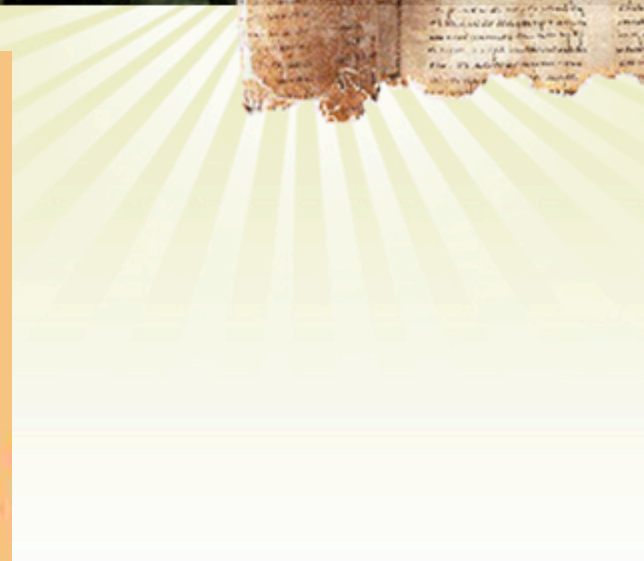
# “In Search of the Holy Grail”



# My Quest



# Holy Grail International



# The International Milieu



## United Kingdom – National Program for Information Technology

- The National Health Service (NHS) created NPfIT to provide an electronic health record for the entire population of England (50M people) by 2010
- The program includes: electronic care record, electronic booking service, e-prescriptions, PACs, IT infrastructure (n3)
- In October 2004 NHS officials were revising the cost estimate to be between £35B and £40B, which includes all national and local operational costs
- Physician adoption, delayed implementations and a negative National Audit Office result have been key issues

## Australia – HealthConnect

- Started in 2002, the federal government has allocated \$128.3M AUS (\$117.74M CAN) that it will spend over the next 4 years on this initiative.
- The HealthConnect network will consist of three layers: regional repositories, electronic health record viewers and a systems integration layer
- MediConnect, the current national electronic medication record system, will be connected to HealthConnect to provide for increased functionality and data
- The HealthConnect Implementation Approach report (Jan 2005) notes failure to address key governance and architecture matters reflecting "the lack of clarity and agreement as a result of the collaborative evolution of HealthConnect".

# The International Milieu

## United States – National Health Information Network

- President Bush put the issue on the national agenda April of 2004, when he called for the widespread adoption of electronic health records in the US over the next decade
- The public-private mix of the U.S. health care system, superimposed on 50 separate states, makes “national planning” a challenge.
- The federal sector has led the way in electronic health record adoption through the efforts of the Veterans Administration (VA) and its custom Vista EHR system
- Kaiser Permanente has been an early adopter of EHRs. Kaiser recently invested \$1.4B USD (\$1.8B CAN) to implement a proprietary EHR across the enterprise.
- Dr. Brailer issued an RFI requesting strategies and plans for the national healthcare information network. Over 500 responses are being reviewed – anticipated that a number of RHIOs will be funded. At HIMMS he indicated that the 3 main challenges are adoption, interoperability and privacy

***“The most remarkable feature about twenty-first century medicine is that we hold it together with nineteenth century paperwork.”***

US Secretary Tommy G. Thompson, Washington, D.C., May 6, 2004<sup>2</sup>.

# The International Milieu



## France

- French Government has launched a program to connect all public agencies with a single electronic infrastructure by 2007
- A smartcard technology will be rolled out as a part of this program
- Funding is through a national organization financed by hospitals

## Others

- Infoway has also been in communication with the European Community; Sweden, Norway, Finland, Germany, Austria, Netherlands, New Zealand and Japan

## Canada – EHRs is seen as a key component of Healthcare Renewal

- **First Ministers'** 10 year funding agreement on renewal drew direct connection between EHRs and health reform, calling for acceleration (Sept. 2004)
- **Health Council of Canada** first annual report strongly recommended “immediate broadening of the use of information technology”, calling for EHRs acceleration in Canada (Jan 2005)

**Common Message ... Accelerate EHR Implementation Now!**

# The Stakes are Enormous



# The Stakes are Enormous



## Patient Safety & Quality of Care

- Up to 24,000 deaths/year due to potentially preventable adverse events (CIHI estimated)
- Preventable “adverse events”, in addition to human costs, ripple throughout the healthcare system: wait times, costs, unnecessary use of scarce resources
- Much of the problem resides in flawed processes and archaic means of managing info

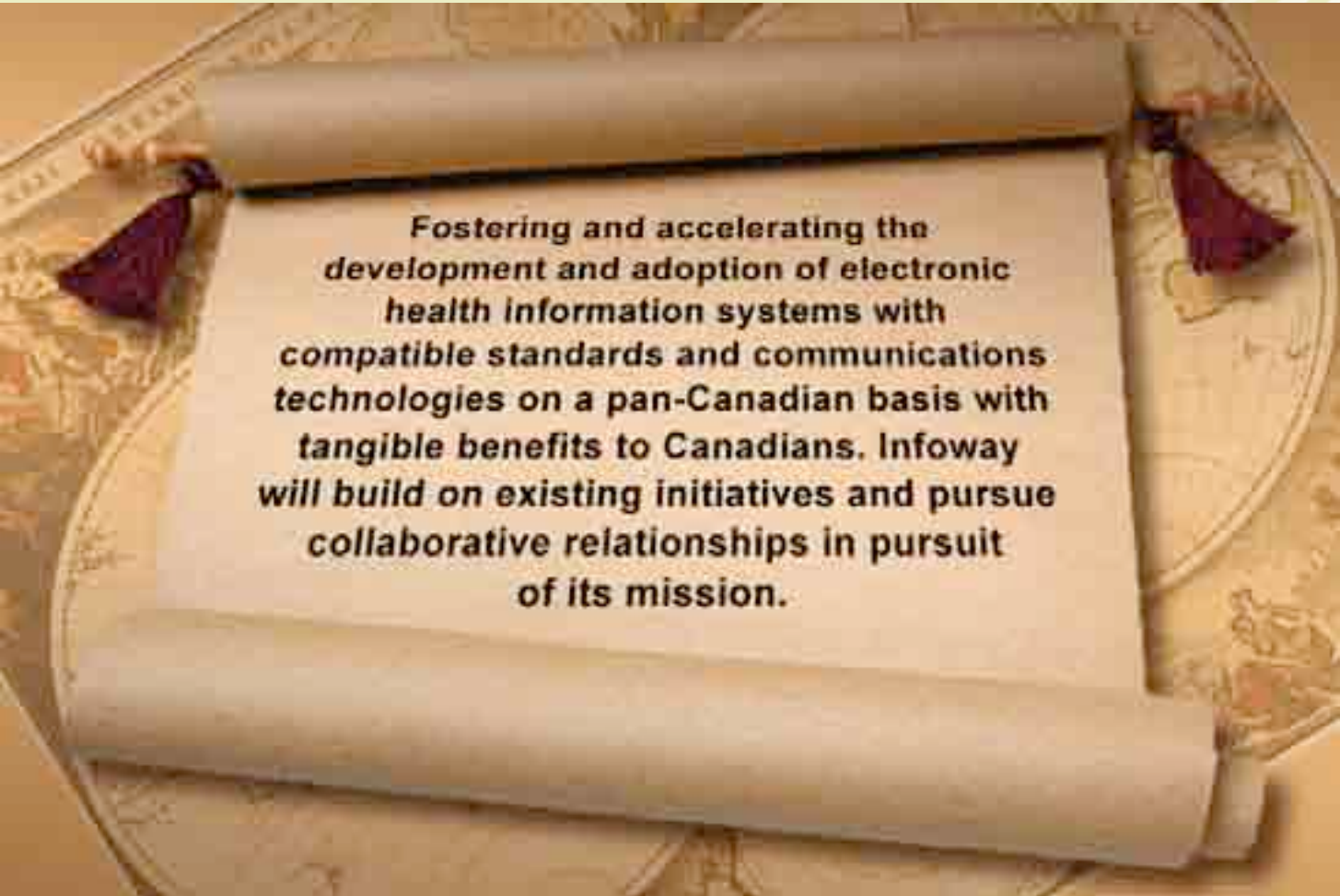
## Waiting Lists, Waiting for Care

- 4 week median wait for specialist visits & non-emergency surgeries ;1 in 7 say waiting negatively affected their lives
- Canada has the worst record – 48 % said “ 2 Hours or More in ER Before Being Treated”
- Key to healthcare reform is timely, accurate assessment of a patient’s condition upfront. This translates to safer, more efficient care as the patient journeys through the system

## Coordination of Care

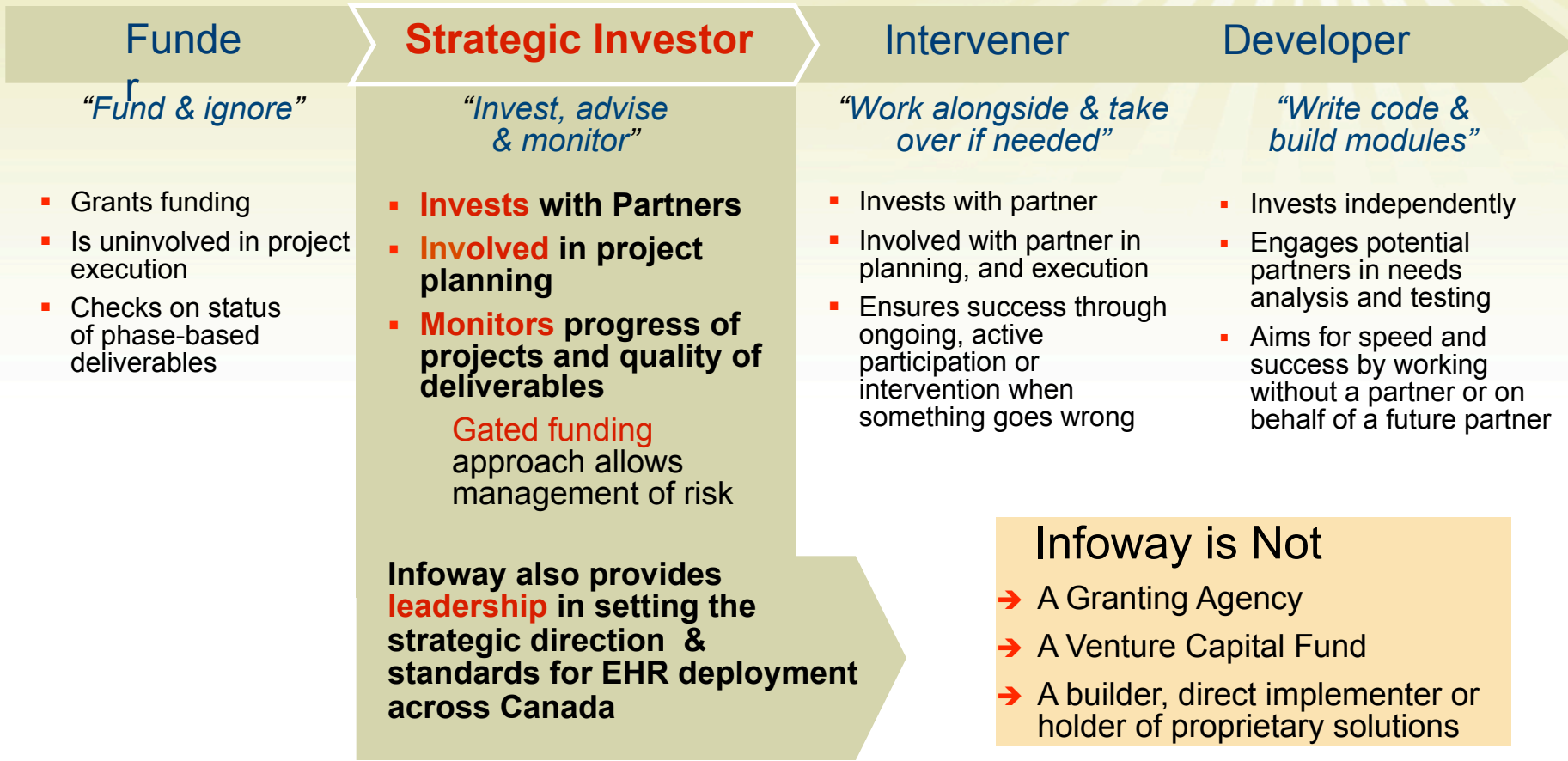
- High % of results are missing or unavailable, duplicate tests, conflicting information
- Lack of Hospital and ER Coordination – Patient survey (36%)
- Given incorrect test results or delayed notification of abnormal results - Patient survey (12%)
- Did not receive Reminders for preventive care - Patient survey (61%)
- Chronic Conditions: Doctor did not give Plan for Self-Management - Patient survey (40%)

# The Mission is Clear



**Fostering and accelerating the development and adoption of electronic health information systems with compatible standards and communications technologies on a pan-Canadian basis with tangible benefits to Canadians. Infoway will build on existing initiatives and pursue collaborative relationships in pursuit of its mission.**

# Infoway's Role – Strategic Investor



# Progressing the Strategies .....

## Targeted Programs

- **Tight focus on nine Investment Programs**

## Leveraged Investment

- Invest in solutions that can be replicated, re-used in jurisdictions across the country

## Collaboration with Health Ministries and Other Partners

- Joint short and long-term planning with health ministries and other partners

## Joint Investments with Public Sector Partners

- Share and leverage the investment in projects with our public sector partners

## Focus on End-Users

- Early and on-going focus on end-users to gain acceptance and adoption

## Alliances with the Private Sector

- Form strategic alliances with private sector to implement standards-based, commercial solutions that reduce cost and risk

## Measure Benefits and Adjust

- Continually measure benefits achieved vs those planned and make the necessary adjustments

# Investment Programs Finalized!



Enduser Adoption and Setting the Future Direction

**Innovation & Adoption - \$60m**

The Electronic Health Record

**Interoperable EHR - \$175m**

Domain Repositories and Healthcare Applications

**Drug Information Systems**  
\$185m

**Laboratory Information Systems**  
\$150m

**Diagnostic Imaging Systems**  
\$220m

**Public Health Systems**  
\$100m

**Telehealth**  
\$150m

Cross Program Components

**Client, Provider and Location Registries - \$110m**

Architecture and Standards

**Infostructure - \$25m**

# Progressing the Strategies .....

## Targeted Programs

→ **Tight focus on nine Investment Programs**

## Leveraged Investment

- Invest in solutions that can be replicated, re-used in jurisdictions across the country
- Arch. Blue Print become accepted Road Map
  - Client Registries – Nfld. & Alta replicated in BC; 8 other jurisdictions planning; joint RFP saving \$500 k + 6 months
  - Provider Registries implemented BC, all Western Provinces; HIA exploring common provider solution potential savings of \$6 M
  - Drugs – Alta experience + Sask + Nfld (56 registered bidders RFP reusable)
  - Labs (OLIS, Alta)
  - DI (shared service approach and governance structure develop for Thames Valley being re-used across country)

## Collaboration with Health Ministries and Other Partners

- Joint short and long-term planning with health ministries and other partners
- 3 yr jurisdictional plans (6 programs worth \$600 M)
  - Privacy and Security Architecture being developed
  - Common Standards (Drugs, Labs, Registries)

# Progressing the Strategies .....

## Joint Investments with Public Sector Partners

- Share and leverage the investment in projects with our public sector partners
  - By end of month would have approved \$260 M +
  - Partners need to put up 2 – 3 times approved funds

## Focus on End-Users

- Early and on-going focus on end-users to gain acceptance and adoption
  - Hired Dr. S. MacLean & more staff with direct healthcare experience to create the two-way bridge to the healthcare community
  - Few jurisdictions have strategy geared to clinician adoption
  - Currently surveying jurisdictions and National Organizations and Associations to develop accurate assessment of current barriers to adoption, leading to a focused adoption strategy – Leading barriers:
    - Align technology with workflow
    - Engage stakeholders as partners
    - Demonstrate clinical value
    - Support change through appropriate incentives
    - Build a foundation of trust based on mutual understanding of needs, expectations and priorities
    - Support experimentation and learning
    - “Collaboratory”

# Progressing the Strategies.....

## Alliances with the Private Sector

- Form strategic alliances with private sector to implement standards-based, commercial solutions that reduce cost and risk
  - 40 meetings with vendors to update on strategy and opportunity
  - Open standards, specs for interoperability and scalability taking hold
  - Proof of the pudding is in how Canada's "small markets" are viewed

## Measure Benefits and Adjust

- Continually measure benefits achieved vs those planned and make the necessary adjustments
  - Booz, Allen, Hamilton study suggests costs \$10 B with benefits of \$6.1B per year
  - More later.....

# But It's Still a Rough World Out There



# ... and People are Watching



- Health Council of Canada
- Politicians
- Bureaucrats
- Privacy Commissioners
- Hospital CEO/CIOs
- Clinicians
- Patients
- First Nations
- Healthcare Associations
- The Private Sector
- Auditor General
- The Media
- The Public

# So Where Are We?

## A Year Ago



INVESTMENT PROGRAMS

	WEST				ON	QC	EAST				TERRITORIES		
	BC	AB	SK	MB			NB	NS	PE	NL	YK	NT	NU
Telehealth													
iEHR													
Laboratory													
Drug		●	▲		▲								
DI	●				●								
Provider Reg.	●	●	●	●									
Client Reg.		●							■	●			

▲ Phase 0/1 Projects    ● Phase 2 Projects    ■ Completed

# So Where Are We?

## Today

		WEST				ON	QC	EAST				TERRITORIES		
		BC	AB	SK	MB			NB	NS	PE	NL	YK	NT	NU
INVESTMENT PROGRAMS	Public Health													
	Telehealth	▲			●	●	▲	▲	▲		▲		▲	▲
	iEHR	▲	▲	▲	▲		▲			▲			▲	
	Laboratory	▲	▲	▲		▲				▲				
	Drug		●	●		●	▲			▲	▲	▲		
	DI	▲●	▲●	▲	▲	▲●	▲	▲	●	■	●	▲	▲	
	Provider Reg.	●	●	●	●		▲	▲	▲	▲	▲			
	Client Reg.	●	●	●	●	●	▲	▲	▲	■	●	▲		

▲ Phase 0/1 Projects    ● Phase 2 Project(s)    ■ Completed

# So Where Are We?

## Next Year

		WEST				ON	QC	EAST				TERRITORIES		
		BC	AB	SK	MB			NB	NS	PE	NL	YK	NT	NU
INVESTMENT PROGRAMS	Public Health	▲	▲	▲			▲	▲	▲	▲	▲			
	Telehealth	●	▲	▲	●	●	●	●	▲	▲	●	▲	▲	●
	iEHR	●	●	▲	▲		●	▲	▲	●	▲	▲	▲	▲
	Laboratory	▲	●	●	▲	▲	●	▲	▲	●	▲	▲	▲	▲
	Drug	▲	●	●		●	●			●	●	●	▲	▲
	DI	▲●■	▲●■	●	●	▲●■	▲●■	▲	●	■	●	●	●	
	Provider Reg.	■	■	■	■		●	●	●	●	●	●	▲	▲
	Client Reg.	■	■	■	●	●	●	▲	▲	■	■	●	▲	▲

▲ Phase 0/1 Projects    ● Phase 2 Project(s)    ■ Completed

# So Where Are We?

## Investment Commitments

- The Infoway Board has committed almost all the \$1.2 billion into 9 programs
- Infoway via the annual 3-Year Jurisdiction planning process has provided notional commitments to jurisdictions of about \$600 million for 6 of the 9 programs

## Investment Approvals

- 2004-05 cumulative project approvals will amount to **\$265 million**
- 2005-06 we are budgeting cumulative project approvals to be **\$484 million**, or 40% of the \$1.2 billion

## Investment Expenses

- 2004-05 cumulative project expenses will amount to **\$105 million**
- 2005-06 we are budgeting cumulative project expenses to be **\$276 million**, or 23% of the \$1.2 billion

# Progress – Diagnostic Imaging Example



# Progress – Diagnostic Imaging

## Solution Description

- Digital storage of radiographic images (e.g. xrays) allowing clinicians to access and view the images regardless of where the clinician is located or where the test was conducted

## Program Target

- Fully implement shared diagnostic image storage and retrieval services in all jurisdictions by December 31, 2009

## Solution Benefits

- Cost avoidance by eliminating duplicate procedures and film processing is estimated at \$370 million annually, Canada-wide

Program Results	Stakeholder Benefits
<ul style="list-style-type: none"><li>▪ Increased access to images and reports</li></ul>	<b>Patient:</b> More timely and appropriate intervention
<ul style="list-style-type: none"><li>▪ Reduced duplication of tests</li></ul>	<b>Provider:</b> Improved access to radiologist/specialist opinions to support decision-making
<ul style="list-style-type: none"><li>▪ Improved physician/radiologist productivity</li></ul>	<b>System:</b> Cost savings and efficiency gains
<ul style="list-style-type: none"><li>▪ Reduced patient transfers</li></ul>	
<ul style="list-style-type: none"><li>▪ Elimination of film processing and storage costs</li></ul>	

# Progress – Diagnostic Imaging

## Investment Strategy

- Invest in commercial diagnostic imaging results storage and communication solutions
- Develop a shared services approach to realize economies of scale [i.e. 1.5 million services]
- Leverage complementary funding from the Health Canada Diagnostic Equipment Fund for investment in DI modalities

## Program Investments

- The approved Infoway Diagnostic Imaging program investment totals \$220 million

Approved Investment	2004-2005	2005-2006	Percent of Program
Annual	\$66.7m	\$40.0 m	18%
Cumulative	\$110.1m	\$150.1 m	68%

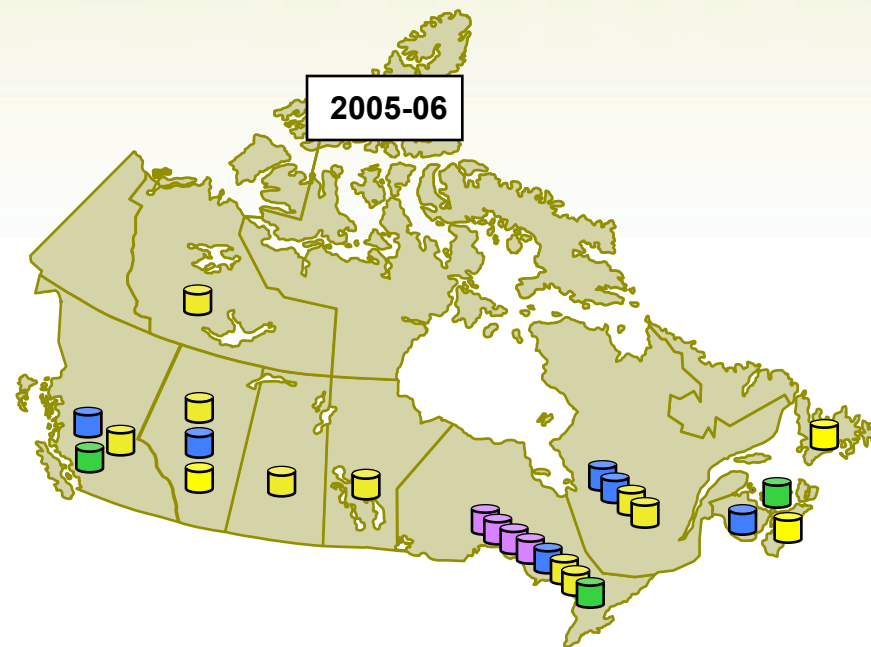
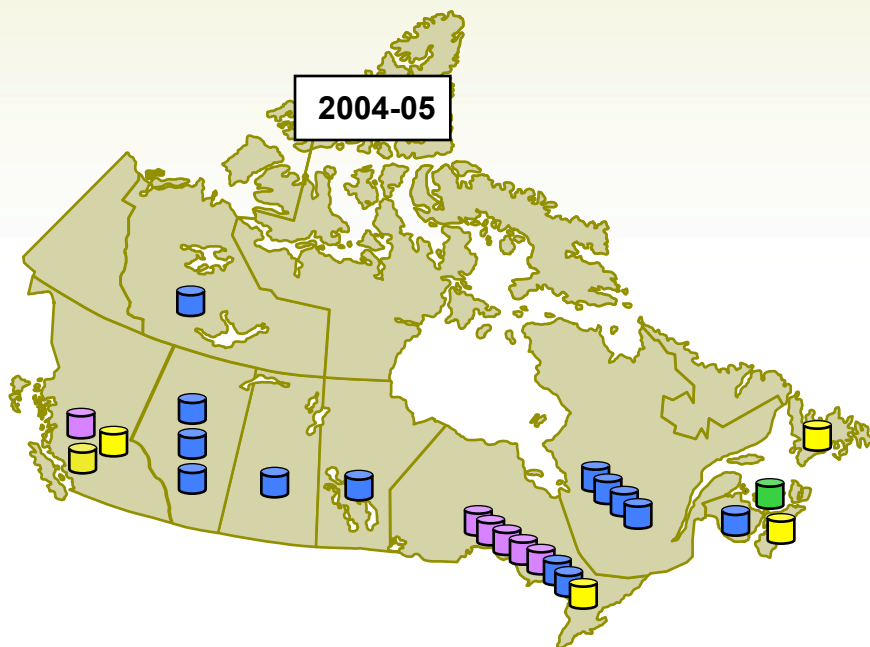
## 2005-06 Diagnostic Imaging Program Actions

- Project Planning in BC, ON, QC, NB
- Project Implementation in BC, AB, SK, MB, ON, QC, NS, NL, NT
- Project Completed in BC (FHA), ON (TVHPP)

# Progress – Diagnostic Imaging



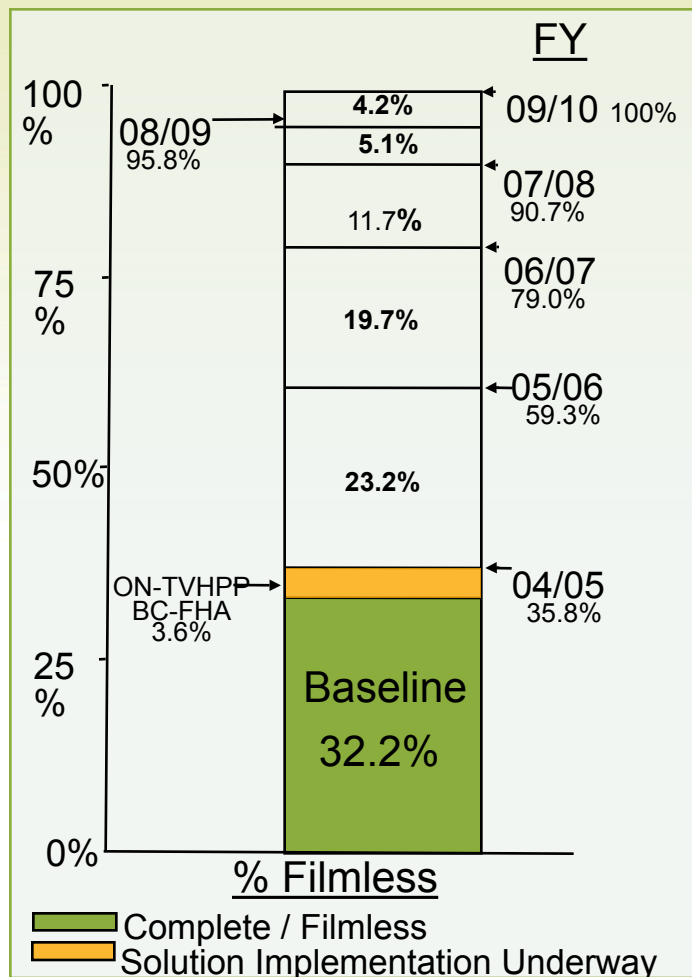
Projects Completed							
2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
0%	0%	4%	12%	16%	56%	88%	100%



■ Target   
 ■ Planning   
 ■ Implementation   
 ■ Completed

■ Target   
 ■ Planning   
 ■ Implementation   
 ■ Completed

# Progress – Diagnostic Imaging



**2005-2006 target for creating 100% filmless state in all acute care hospitals in Canada:**

**59.3%**

## Background:

- It is estimated that 32% of the DI Exam volume was already PACS enabled prior to Infoway's project investments.
- 25 shared (multi-hospital) PACS projects are forecast Canada-wide. Two projects are currently implementing solutions while 9 more are in the planning stages.
- Each project is approx. 3 yrs in length. Hospitals are sequentially connected to their shared PACS over the course of the project's timeline rather than all sites going live at one time. (The expected annual growth towards the 5 year goal line is shown in the graph.)

## Definitions

- All major imaging modalities\* are in scope

## Numerator:

- Actual DI exam volumes that are PACS enabled

## Denominator:

- Total Hospital DI Exam Volume = 20,173,540 (Data source: internal Infoway estimates.)

## Data Issues

- Data extrapolations have been used where necessary to complete the national estimate.

# Progress – Diagnostic Imaging



# But ..The Pace of Investment is Too Slow

1. **Slow Startup** – funding agreements; Quebec membership, strategies
1. **Infoway Investment Ratios** – on average only 27% of the total cost of a project so often not enough to stimulate new jurisdiction investment.
1. **Jurisdictional Budget Process** – jurisdiction approval for projects is a 12 to 18 month process to get matching funds
2. **Regional/Local Capital** – jurisdictions are not fully leveraging regional/local investments to help increase their pace of investment
3. **Infoway Deployment Strategy** – to start with 1-2 early adopter projects and replicate takes too long – the initial projects have taken 2-3 years to complete.
4. **Solution Procurement Process** – the jurisdiction solution procurement cycle has taken too long – up to a year to complete large phase 2 procurements
5. **Competing Investments** – Jurisdictions are investing heavily in clinical feeder systems, albeit necessary, but compete for Infoway projects
6. **Jurisdiction Readiness** – commitment, ehealth governance, strategy, legislative requirements, human resource capacity, technology capacity
7. **Physician Adoption** – gated funding tied to adoption, yet take-up slow
8. **Interoperability** – gluing it all together takes time

# How Can We Increase the Pace?

1. **Slow Startup** – start-up issues resolved
1. **Infoway Investment Ratios** – look to increase investment ratios
1. **Jurisdictional Budget Process** – 3 year jurisdiction planning
2. **Regional/Local Capital** – consider regional/local capital investments
3. **Infoway Deployment Strategy** – start 4-6 projects simultaneously.
4. **Solution Procurement Process** – multi-jurisdiction procurements
5. **Competing Investments** – try to leverage this spend
6. **Jurisdiction Readiness** – provide as much support as possible
7. **Physician Adoption** – make physicians a key partner in the process
8. **Interoperability** – implement standards and use experienced Systems Integrators to “glue” the systems together

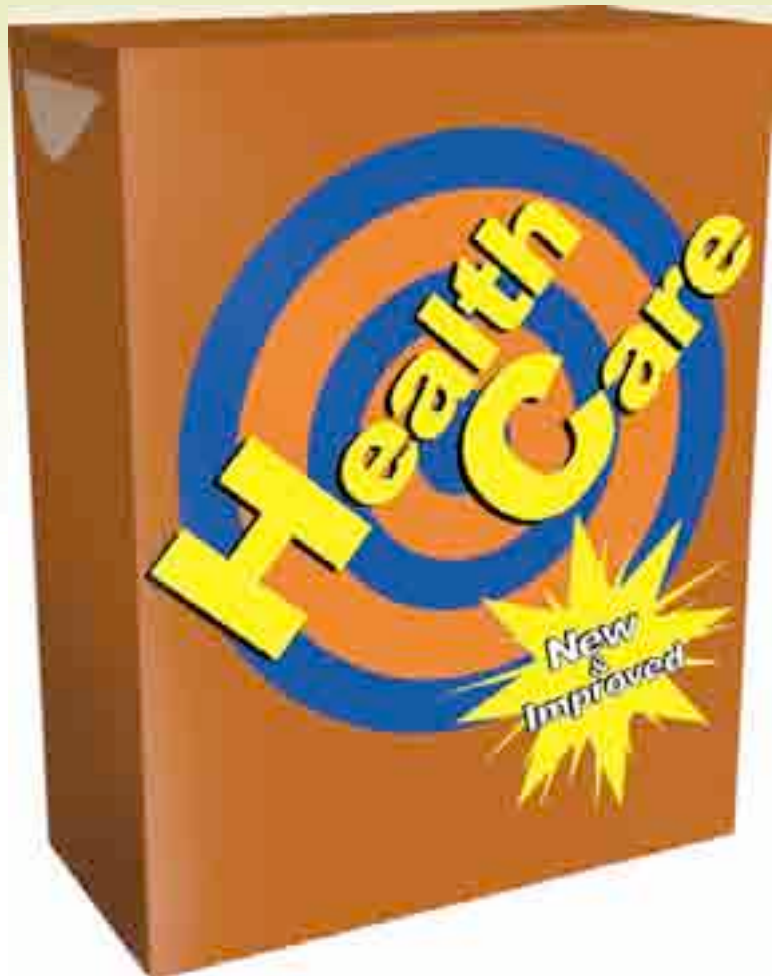
# Back to the Quest for the Holy Grail



# There Are Many Different Paths to Take



# Take Ontario for Example

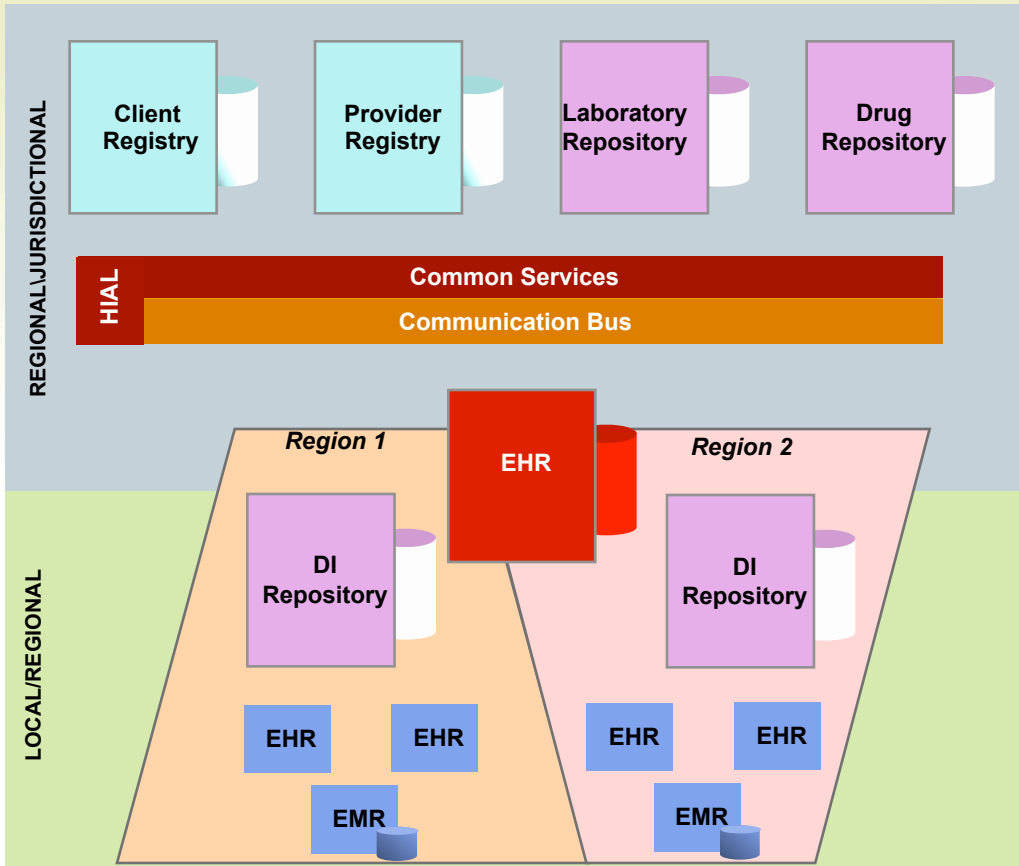


## Many New Initiatives

- LHINs
- Wait Lists
- Cost Reductions
- Family Health Teams
- Roadmap to EHR???
  - Non-Existent?
  - Incorrect?
  - Lost!

**I DISAGREE!**

# A Roadmap Exists!

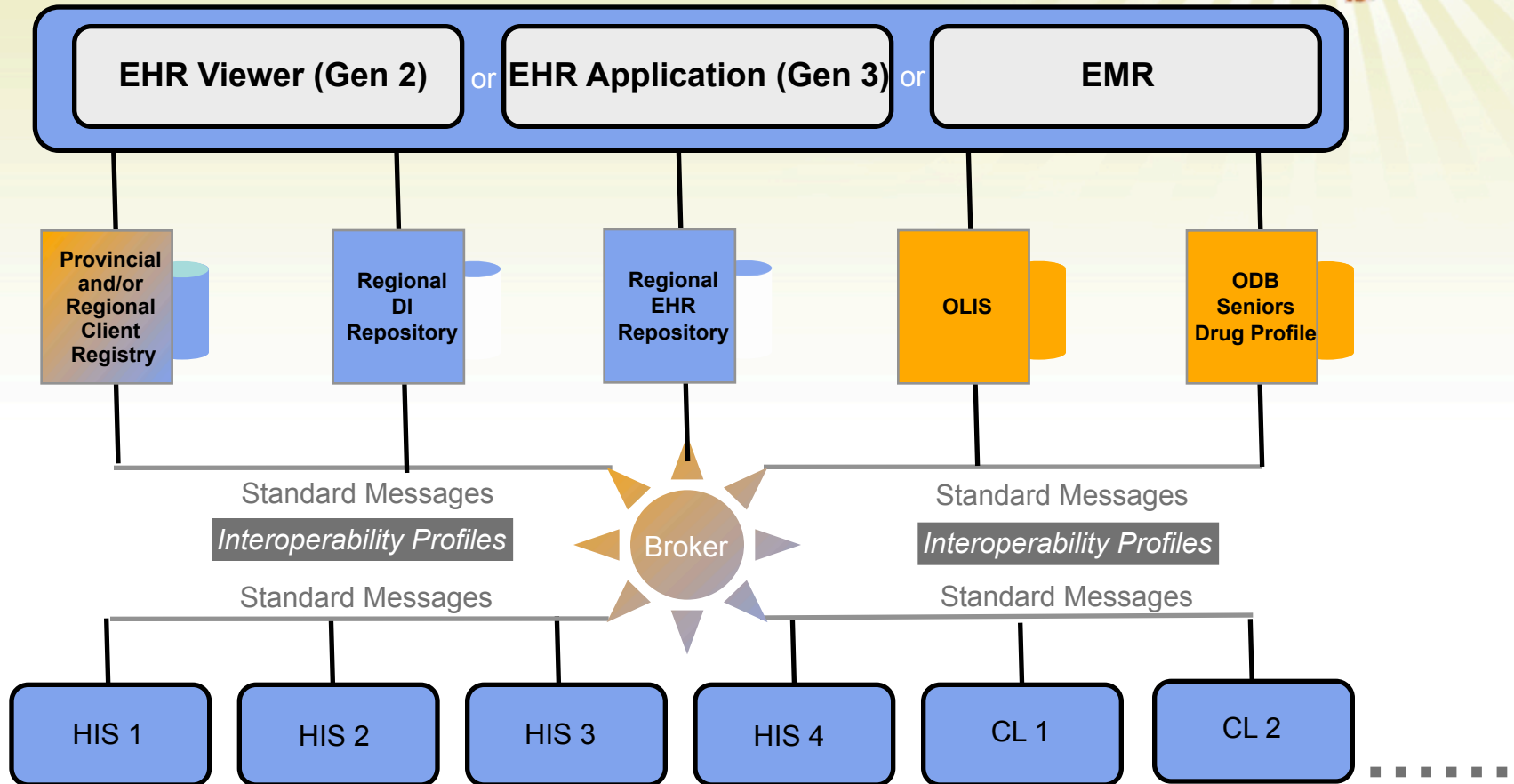


## ONTARIO

- Provincial Client Registry
  - Regional EMPs?
- Provincial Provider Registry
- Provincial Lab Repository [OLIS]
- Provincial Drug Repository [ODB]
- 8 DI Repositories?
- ? Supra-Regional EHR Repositories?
- Local CIS, EMR, and EHR applications and viewers
- SSHA HIAL?

# How Do You Put the Pieces Together?

It's a combination of provincial  and regional/local  systems



# Clearly, What is Required Is.....

- **Commitment** – Strong support to complete the job **together**
- **ehealth Governance** – collaborative leadership to get the job done quickly and effectively
- **eHealth Strategy** – clear, concise, pragmatic and well understood
- **Privacy** – the rules around consent and access to information are clear
- **Human Resources** – the right mix of qualified public and private sector resources are in place
- **Technology** – a well designed set of interoperable commercial solutions - custom develop only as a last resort
- **Deployment** – a sensible staged approach to deploying the EHR that leverages provincial and local legacy systems as well as implements new applications for populations of at least 1.5 million
- **Change Management** - well designed approach that stimulates adoption by clinicians, especially physicians

# Throwing down the Gauntlet - Infoway

- **Increase the Pace of Investment**
  - Revisit the investment ratios
  - Look at regional/ local investments
  - Further streamline our processes
  - Continue to make the case for increased federal/provincial investment
- **Actively Engage Physicians**
  - Keep the *physician automation and use* issue in front of key decision makers
  - Make the clear business case for investing in physician automation
  - Engage with and Include physicians in all EHR activities
- **Measure the Benefits**
  - Continually improve the benefits framework
  - Clearly demonstrate how an EHR is making a difference!



# Throwing down the Gauntlet - You

## Administrators

- Understand the critical importance of moving to EHRs – for your organization, for the province, for the country - show commitment; demonstrate leadership, work together
- Develop a consensus on a roadmap to get there with resource commitments – work together with government, physicians nurses, and other health organizations in a multipartite collaborative manner.

## Physicians

- MD Ontario just announced \$150 million; get connected; ensure that the initiative is supported within the overall context a roadmap to get to interoperable EHR
- Stress the importance of change management and Interoperability

## Nurses

- Support hospital efforts to implement EHR solutions
- Demonstrate commitment – influence peers – support continuing education

## Vendors

- Products must be interoperable and support common standards

## Government Officials

- Leadership
- Budget and resource commitment



# Next Step – Commitment First !

Above all, the reality of an EHR for every Canadian requires commitment and leadership from all of us

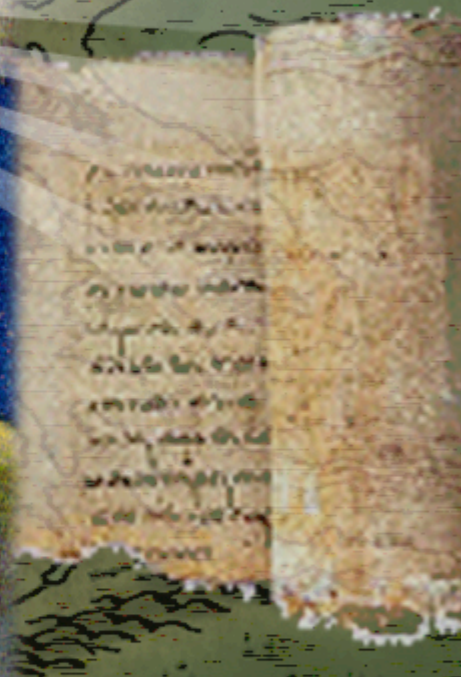


**Building the Breakfast of Champions**



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