



Statistics Canada
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CDER Project Costing Model

November 2, 2012

Outline

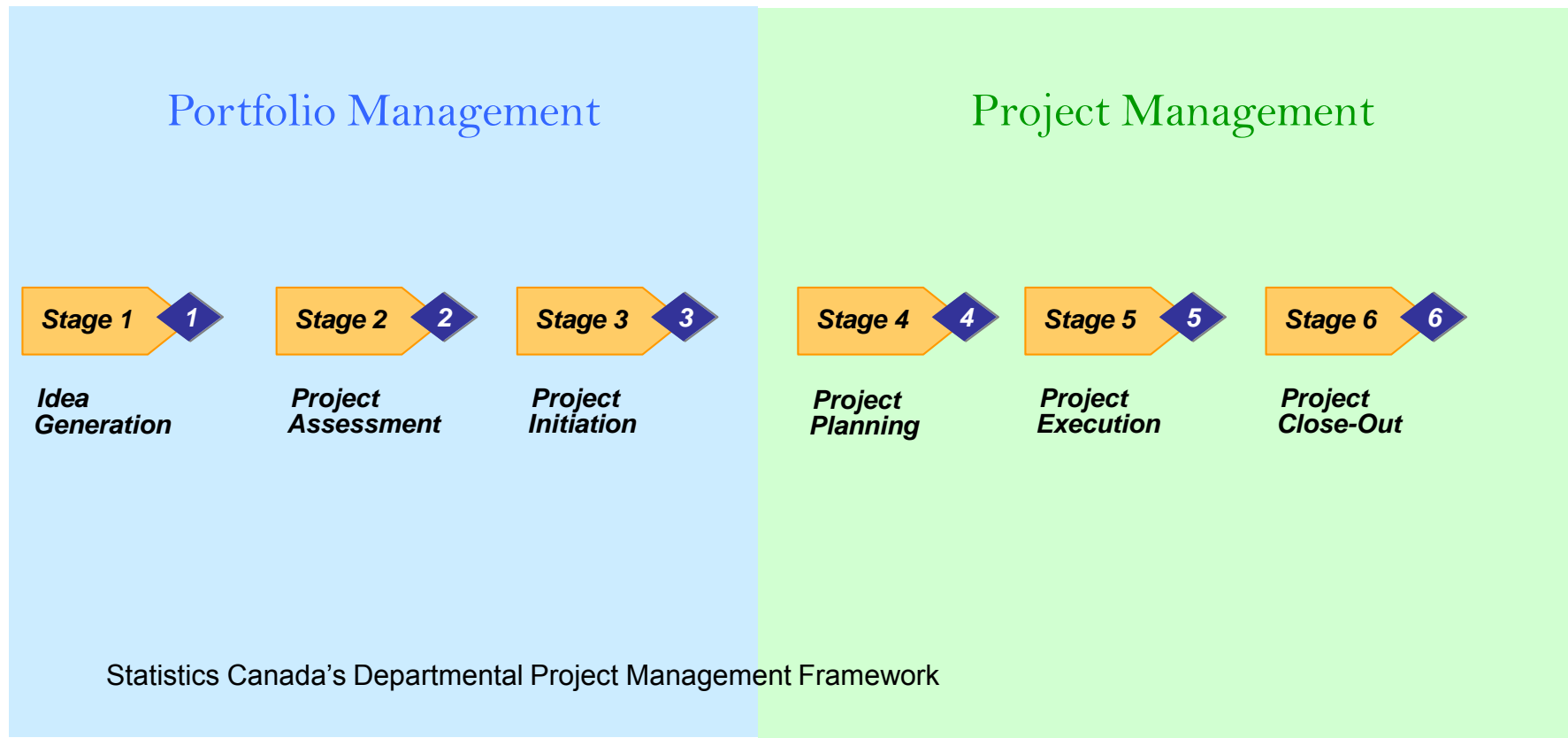
- Purpose
- CDER Costing Model
 - Activity-Based Life Cycle Costing
 - Project Complexity Risk Assessment
 - Simple, Medium, Complex
 - Tool for Costing a Record Linkage
- Conclusion

Purpose of the CDER Costing Model

- Provide a credible, consistent and transparent way of estimating the resource requirements for carrying out a project at CDER
- Provide a simple and portable tool that helps to engage the client and service provider in the project cost analysis
- Facilitate an end-of-project review so that costs can be adjusted and minimized over time

Activity-Based Life Cycle Costing

Costs are based on the *activities* needed to support a project over its life cycle



CDER Costing Model

CDER costing model is implemented in a Excel workbook

- There is a worksheet for each stage of the project
- Each line in the worksheet records:
 - a description of the activity
 - who performs the activity
 - the Statistics Canada cost recovery rate for that individual
 - the time used to undertake that activity
 - the cost
- Each individual stage worksheet feeds into a financial summary worksheet

Snapshot from Stage 5: Execution worksheet

5.2 Record Linkage

\$ 3,823.93

Record Linkage Omni-bus or Formal

<i>Date</i>	<i>Description</i>	<i>5.2.1</i>	<i>Task</i>	<i>Division</i>	<i>Resource</i>	<i>CIC Rate</i>	<i>Days</i>	<i>Sub-Total</i>	<i>\$ 3,823.93</i>
5.2		5.2.1	Prepare Record Linkage Application for Policy Corr EC-08			\$ 882.07	0.26	\$ 229.34	
5.2		5.2.1	Prepare Record Linkage Application for Policy Corr EC-06			\$ 718.92	5	\$ 3,594.59	
5.2		5.2.1				\$ -		\$ -	
5.2		5.2.1				\$ -		\$ -	
5.2		5.2.1				\$ -		\$ -	

An example of a summary of costs

<i>Project Title, estimate of project cost</i>		<i>As of: 01/11/2012</i>	
Total		\$ 37,193	100.00%
1 Idea Generation		\$ 208	0.56%
1.1 Rapid Planning Facilitation/STC Subject Matter Expertise and Methodological Support		\$ 208	0.56%
2 Assessment Project Feasibility: The Strategic Context, Analysis and Recommendation, Mana		\$ 208	0.56%
2.1 Strategic Context (Functional) Review: Business Needs and Desired Outcomes Analysis (Pri		\$ 208	0.56%
2.2 Analysis, Recommendations: Options Analysis, Feasibility Study and Recommendations		\$ -	0.00%
3 Final Project Definition and Approval		\$ 2,875	7.73%
3.1 Finalize Project Definition: Goal, Scope, Schedule, Budget, Quality		\$ 302	0.81%
3.2 Prepare/Approve Project Governance, Oversight and and Communication Strategy Risk anc		\$ 416	1.12%
3.3 Prepare Project Charter		\$ -	0.00%
4 Planning and Development (Define the work build the schedule and budget)		\$ 441	1.19%
4.1 Planning and Development		\$ 441	1.19%
5 Execution		\$ 33,020	88.78%
5.1 Data Development		\$ 17,254	46.39%
5.2 Record Linkage		\$ 3,824	10.28%
5.3 Research and Analytical Support		\$ -	0.00%
5.4 Disclosure Review		\$ 5,751	15.46%
5.5 Project Management		\$ 1,601	4.30%
5.6 Change Management		\$ 229	0.62%
5.8 Non-Salary		\$ 3,486	9.37%
6 Project Closure		\$ 441	1.19%
6.1 Perform Project Closure Activities		\$ 441	1.19%

Project Complexity Risk Assessment

Triaging of projects into simple, medium and complex projects by looking at key cost drivers

- Does the project use an existing database?
- Does the project require an record linkage proposal?
- Will Statistics Canada be involved in the analysis?
- What are the expected type of outputs?
- Are there special software requirements?
- How long is the project expected to take?

The results of the assessment give a baseline (automatically fills out parts of the costing spreadsheet) from which to start the costing of a project

Examples: A Simple Project

- ***Project Cost: \$ 6,000***

<i>Requirement</i>	<i>Assumptions</i>
Data Development:	Extract of existing data
Record Linkage:	No Record linkage
Research and Analysis:	No CDER researcher required
Disclosure Review:	CDER Review of analytical results 2 days or less
Project Development Strategy:	Spans a single fiscal period
Project Configuration:	Less than 3 months

Breakdown of Costs for a Simple Project

Type	Cost	Percent of total
Facilities	\$3,486	58%
Disclosure review	\$1,438	24%
Data preparation	\$178	3%
Administration and management	\$898	15%
Total	\$6,000	100%

Moderate Costing Scenario

- **Project Cost: \$12,167**

<i>Requirements</i>	<i>Assumptions</i>
Data Development:	Extract of existing data
Record Linkage:	Record linkage covered under Omni-bus*
Research and Analysis:	Co-authorship Client Initiated*
Disclosure Review:	Output requires extensive changes to authorize removal: Exceeds 2 days but less than 4 days*
Project Development Strategy:	Spans a single fiscal period
Project Configuration:	At least 3 months to a maximum of 12 months*

Complex Costing Scenario

- Project Cost: \$ 29,991**

<i>Requirement</i>	<i>Assumptions</i>
Data Development:	New Dataset Development*
Record Linkage:	Record Linkage Formal (Policy Committee)*
Research and Analysis:	N/A
Disclosure Review:	Review requires interaction with methodology*
Project Development Strategy:	N/A
Project Configuration:	Duration >12 months*

Record Linkage Cost Function

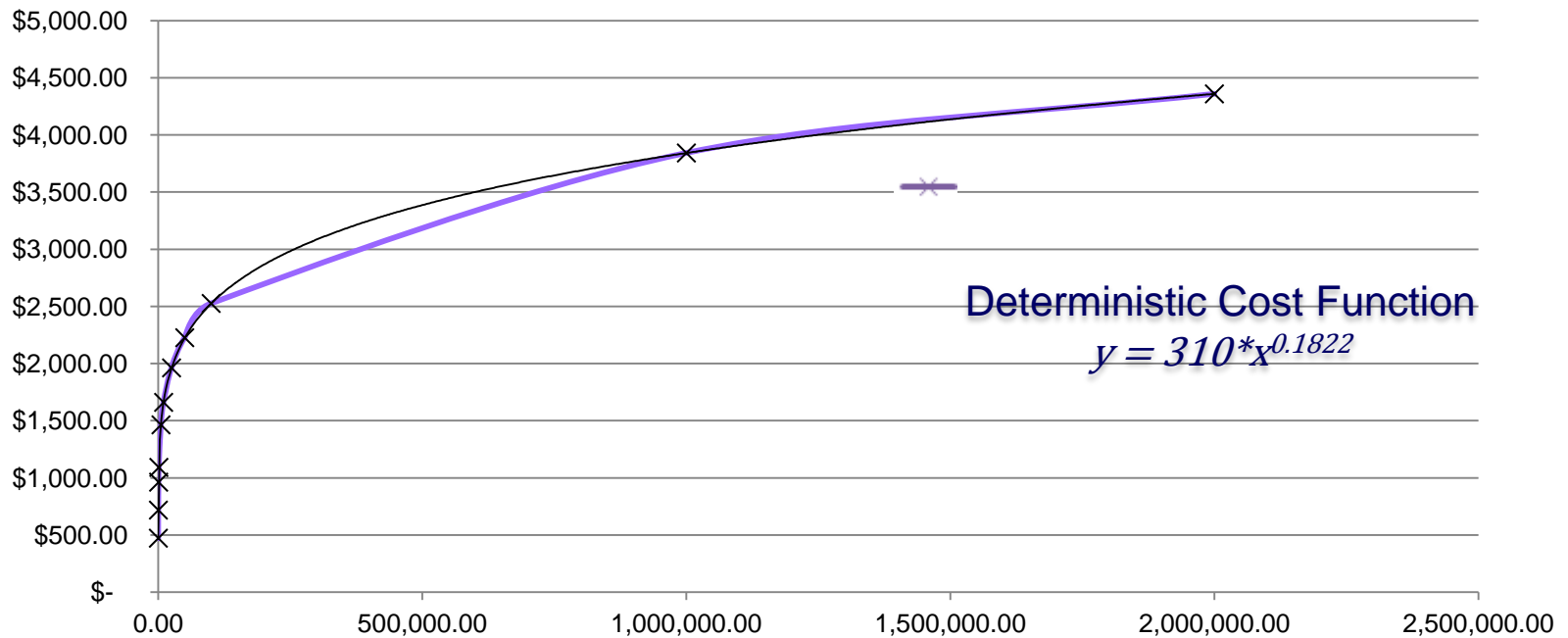
- Provides a systematic approach to developing reliable and valid cost estimates for record linkage projects
- Cost Considerations
 - Number of Years (periods) of linkage required
 - Size – Number of Records in Client Dataset
 - Existence of a common key record identifier
 - %Deterministic vs. %Probabilistic linkage
 - Pre/Post Processing Required
 - Management Cost

Record Linkage Cost Function

Total Cost		\$8,264.70
Cost in EC-04 Days		15.68
Multiple No. Of Matching Periods or Years		1
No of Records in Client Dataset		4000
Records with Numeric Identifiers (%)		0%
Costing Details		Cost (%)
Preprocessing	\$944.11	11.42%
Detrministic Match	\$0.00	0.00%
Fuzzy or Probablistic Match	\$6,287.86	76.08%
Impact of No. of Records	\$0.40	0.00%
Impact of Multi-Year Match	\$0.00	0.00%
PostProcessing	\$944.11	11.42%
Mgmt	\$88.21	1.07%

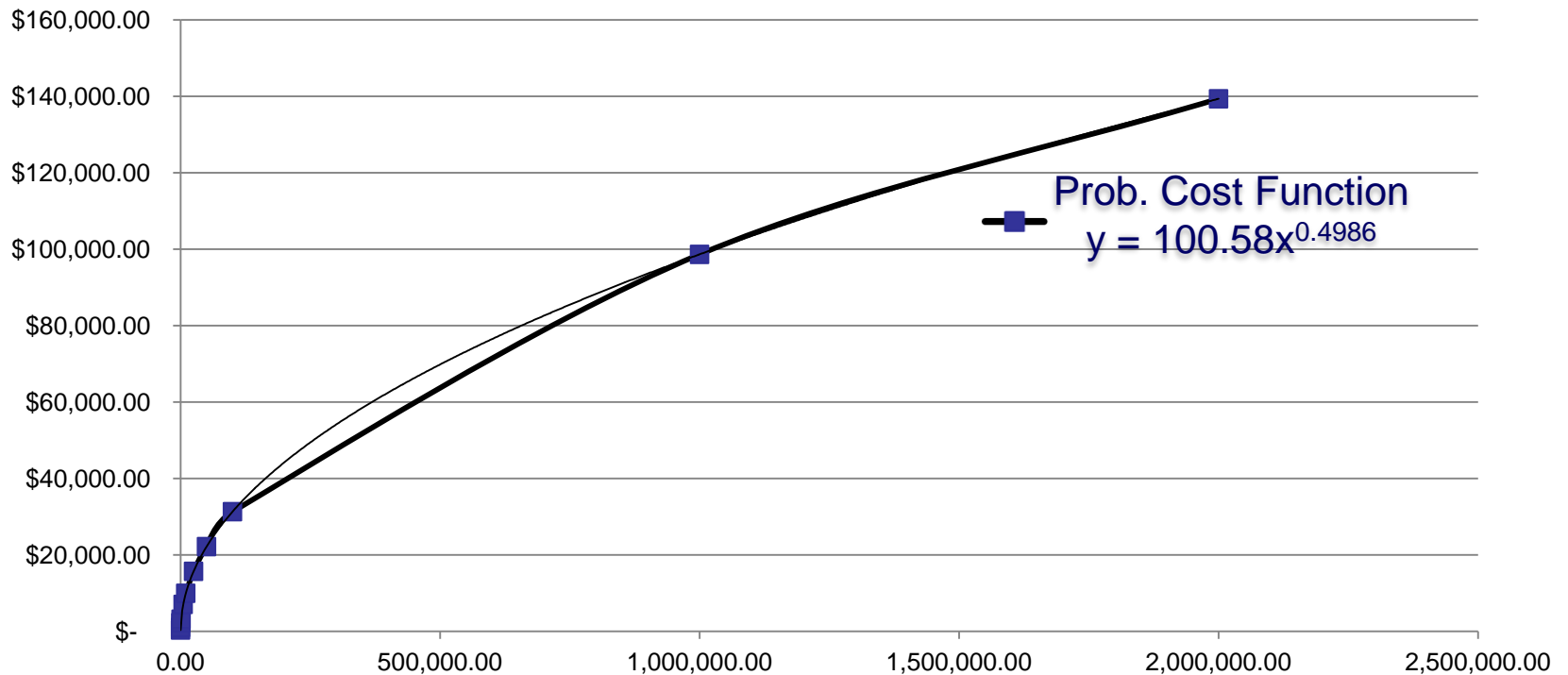
Deterministic Cost Function

Deterministic Record Linkage Cost Function



Probabilistic Cost Function

Prob./Fuzzy Record Linkage Cost Function



Conclusion

- The CDER costing model (activity-based life cycle costing):
 - provides a *transparent* and *credible* framework to cost projects
 - facilitates the *consistent* costing of projects, while allowing for a diversity of possibilities
 - allows a detailed review of project costs so that CDER can ensure projects are facilitated at minimum cost