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An examination of the value of the Victorian Government's investment logic map as a tool for front-end evaluation of investment proposals

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This article considers a tool called an 'investment logic map' which was developed by the Victorian Government Department of Treasury and Finance to assist in testing the rationale for proceeding with investment proposals (particularly information and communications technology investments) while they are still at an early stage of development. The article views this tool through the lens of evaluation theory and practice, and situates the investment logic map within the practice of front-end evaluation.

From this perspective, the article considers some of the drawbacks of the investment logic map as an example of program logic. The article argues that, because of the pivotal role the investment logic map plays in the management and review of investments through their lifecycle (as part of the government's broader Investment Management Standard), it needs to be underpinned by more robust evaluation practice. The article concludes by suggesting a way in which the strengths of the investment logic map can be retained, while reducing the risks inherent in its current use.

The Victorian Government's Investment Management Standard

The Investment Management Standard (IMS) is a homegrown suite of tools and techniques for the through-life management of asset investments, developed in-house by the Victorian Government Department of Treasury and Finance (DTF). According to the DTF guideline document, the IMS is aimed at allowing investment decision-makers within government to 'clearly define the reason for an investment, shape the solution that will best respond to the need and track the delivery of benefits throughout the investment lifecycle' (DTF 2008a, p. 3).

Origins of the IMS

While it is being implemented broadly as a recommended approach for all types of investments, the IMS was originally developed to support decision-making on information and communications technology (ICT) investments (Bushell 2007; Hodgkinson 2007; Wright 2007). It fits within the broader context of program management, benefits management and portfolio management as these processes apply to the delivery of ICT capability, and more generally to project management.

It also has its roots in the United Kingdom Government's Office of Government Commerce (OGC) Gateway Process, which was originally designed for ICT projects, and introduced by the Victorian Government in a modified form in 2003.

In parallel to the distinction between program management and project management, the IMS creates a distinction between *investment management* and project management. As noted above, investment management focuses on how an investment responds to a need, and tracks the benefits delivered by an investment in meeting that need. Project management, on the other hand, focuses 'primarily on the question of whether a funded project is running to time and budget' (DTF 2008a, p. 3).

As a specific subset of program management, *benefits management* is focused on defining and measuring the benefits of a program or project (Lin & Pervan 2003; PMG 2005). In the ICT domain, *benefits management plans* articulate how investment in ICT systems will contribute to business objectives (Lin & Pervan 2003, p. 15). Terry Wright, one of the developers of the IMS within DTF, argues that investors have turned to benefits management plans to find out whether their investment has yielded the expected benefits, but that 'investors are usually left with a thick document that is difficult to access and of little practical value' (Wright 2007, p. 58). One of the key goals of the IMS is to deliver an approach to benefits management that allows an investor 'to shape and track an investment throughout its life, using the language and concepts they best understand' (Wright 2007, p. 59).

The IMS is also linked to the broader practice of *portfolio management* (DTF 2008a, p. 4). Viewed within a hierarchy of project management practice, portfolio management is considered to be at the top of the ladder (Andersen & Jessen 2003, p. 459). Andersen & Jessen (2003, p. 459) describe it as 'the management of a number of projects and programs that do not necessarily share a common objective'. In the ICT environment, it is described as a consolidated group of 'investment activities developed and executed across a business unit, department, agency or even whole of government' (McClure 2007, p. 2). In this context, the IMS has been used to assess and prioritise investment proposals (as part of the annual Victorian Government Budget process), and to shape and focus investments on whole-of-government strategic directions (Wright 2007, p. 58).

Overview of the IMS

The IMS consists of six elements, which together span the lifecycle of an investment from concept through to full operation (see Figure 1). The following overview of the IMS is drawn from the DTF's *Investment Management Standard* publication (DTF 2008a).

At the 'problem definition' stage of an investment, the *investment logic map* (ILM) is developed to identify the drivers for the investment, the objectives of the investment, the benefits it will deliver, and the changes and enabling assets needed to bring about these benefits. For each benefit, one or two key performance indicators (KPIs) are identified. Then, at the 'solution definition stage', the ILM is incorporated into an *investment concept brief* that identifies the 'dis-benefits' (or negative impacts), likely time frame, risks, dependencies, and costs of the proposed investment. The third stage of concept and feasibility testing—the 'benefit definition' stage—is focused on the development of a *benefit management plan* which, as noted above, aims to 'speak to' the investment decision-maker in a simple, practical and effective document. The investment management plan builds on the ILM by taking the benefits and KPIs identified in that document and attaching measureable targets to the KPIs and organisational responsibilities for managing each benefit/KPI pair (who will deliver the benefit, and who will measure its achievement). The investment proposal then moves into the detailed planning phase, involving the development of a *business case* which sets out a structured rationale for undertaking the investment.

Within the logic of the standard, it is only after these steps are completed that a decision is made on funding an investment proposal, and the investment moves into the implementation phase. Implementation involves *project management* (which in keeping with the distinction identified above, is considered to be outside the IMS) and *investment reviews*, which are conducted at regular intervals throughout the implementation phase to determine whether the original logic for the investment (identified through the ILM) remains valid.

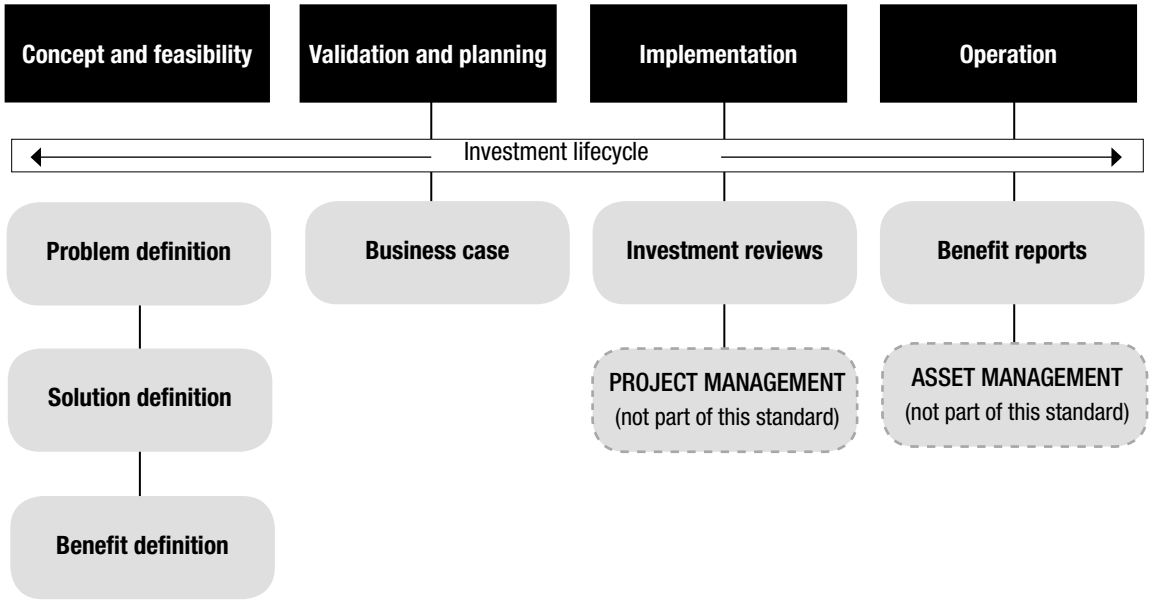
Once the implementation is complete and the investment is fully operational, the benefits it is delivering are tracked through *benefit reports*. Benefit reports track and report on the KPIs that were identified through the ILM and subsequently articulated in detail in the benefit management plan.

The role of the ILM within the IMS

As the overview above indicates, the ILM is a fundamental element of the IMS. Not only does it initiate the process (as the focus of the problem definition stage), but it permeates each of the subsequent components of the overall approach, with both its logic and its detailed outputs underpinning the rest of the standard. As well as being a specified product, the ILM is also the result of a defined process, with particular rules relating to its participants and its conduct.

The key element of the process is that the ILM is developed in a two-hour, facilitated workshop. A strict time limit is one of the defining features of an ILM workshop: 'if in a facilitated workshop the Investor is not able to articulate the problem in 2 hours then the compelling need for an investment should be questioned' (DTF 2008b, p. 8). Also fundamental to the development of an ILM is this concept of the *investor*. The investor is defined as:

FIGURE 1: COMPONENTS OF THE INVESTMENT MANAGEMENT STANDARD



Source: reproduced from DTF 2008a, p. 5

'that person who has identified a business need and will be responsible for making an investment to satisfy that need. This person will ultimately be responsible for the delivery of the benefits that will respond to the need' (DTF 2008a, p. 7). The investor is a critical participant in the ILM workshop and is the main decision maker.

As well as being time-limited, an ILM workshop is intended to involve a minimum number of participants (the guidance suggests ideally around five). The facilitator of an ILM workshop has the dual responsibility of extracting the best 'investment story' from the participants, and challenging everything the participants say, especially the drivers (DTF 2007, p. 19). Participants are not expected to bring anything to the workshop, nor are they expected to have done any preparation, except to have thought about the drivers and benefits of their proposed investment.

The format of the two-hour workshop is driven by the structure of the ILM product itself. As shown in Figure 2, an ILM is made up of five elements:

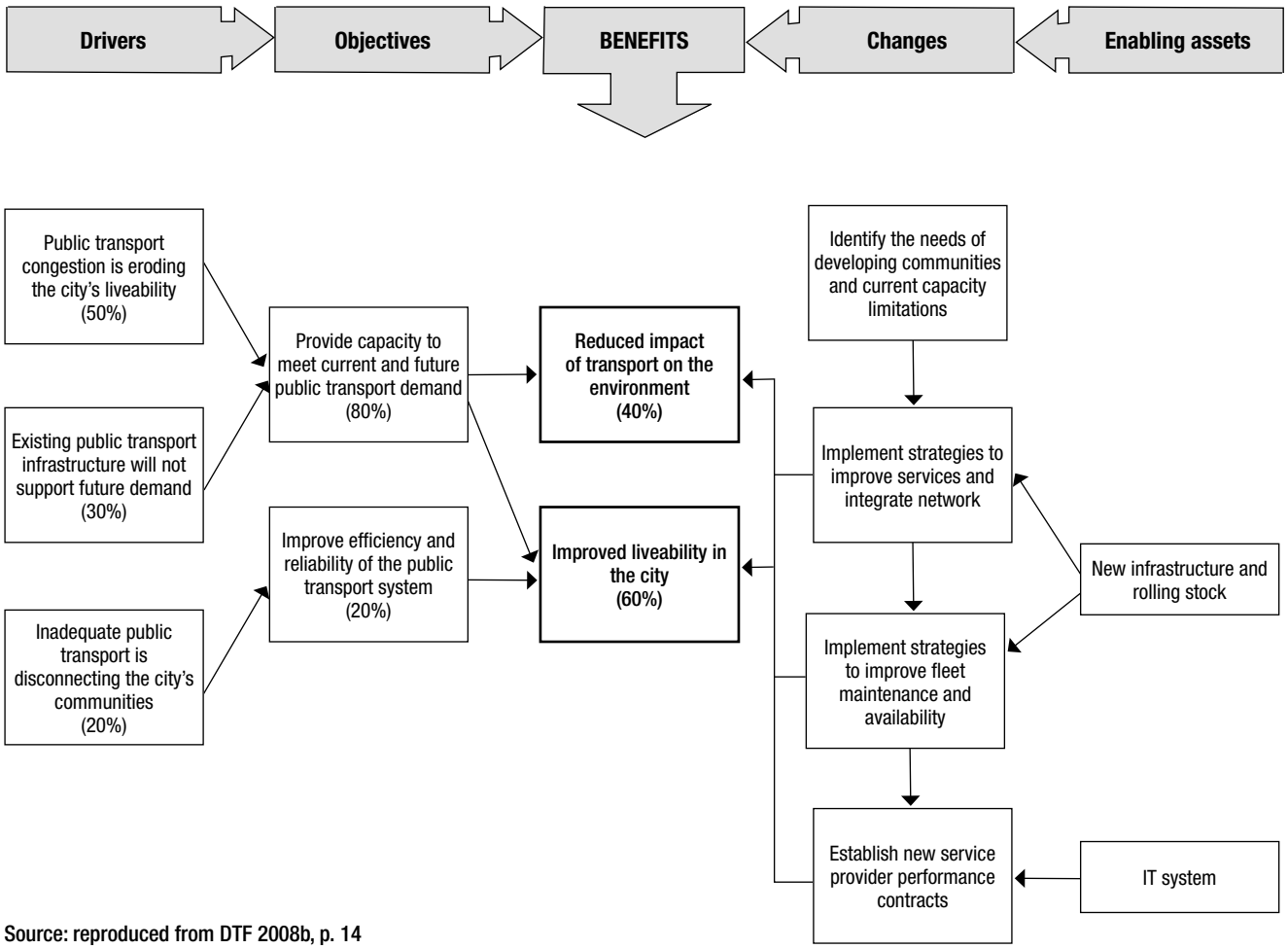
- drivers
- objectives
- benefits
- changes
- enabling assets.

The ILM is developed on a whiteboard, with the facilitator responsible for capturing the developing map. An ILM workshop begins at the left of the map, with the *drivers*, and works across to the benefits in the middle. Drivers are usually stated in terms of the problems to be fixed. An ILM should have no more than two or three drivers. The second step is to identify the *objectives* of the investment proposal—these represent the 'high-level action (strategic intervention) that is proposed to react to the identified Drivers' (DTF 2008b, p. 9). Again, only a small number of high-level, high-priority objectives are identified. In the third step, participants are asked to identify the *benefits* the investment will deliver. Benefits are defined as those outcomes that will be provided for the government or the community when the organisation achieves a stated objective.

As this description shows, drivers, objectives and benefits are intended to be linked by a causal logic—addressing an identified problem leads to the achievement of a specified objective, which in turn reaps a particular benefit. However, as illustrated in Figure 2, a driver can be addressed by more than one objective, and achieving an objective can have more than one benefit. Also, some drivers are more or less important for a particular investment. To complete the logic, percentage weightings are assigned to each driver to reflect their relative importance, and these weightings are carried forward along the logic chain to indicate how much each objective addresses the drivers to which it is linked, and how much each objective contributes to the benefits it delivers.

Guided by the facilitator, participants discuss and agree percentage weights to be applied to the drivers, objectives and benefits. In the example

FIGURE 2: SAMPLE INVESTMENT LOGIC MAP FOR A PUBLIC TRANSPORT INITIATIVE



Source: reproduced from DTF 2008b, p. 14

shown in Figure 2, the first two drivers are each considered to be driving 50 per cent and 30 per cent of the need for the investment respectively, with the third driving 20 per cent of the need. The first two drivers both contribute to the first objective, so it is assigned 80 per cent (50 plus 30). This objective is considered to contribute equally to both benefits, so 40 per cent is assigned to each. The second objective contributes solely to the second benefit, so the full 20 per cent is assigned here, for a total of 60 per cent (40 plus 20).

Once this three-step logic chain has been defined, and percentage allocations agreed, *changes* and *enabling assets* are identified. Changes are any activities undertaken to deliver the benefits. The DTF guidance states that a wide range of activities can be included as changes, but that anything involving capital investment (for example, 'develop a new ticketing system', 'build a school') should be categorised as an enabling asset (DTF 2008b, p. 12).

The final element of the ILM workshop is to assign KPIs and targets to each of the benefits. As shown in Figure 3, each benefit must have at least one or two measureable KPIs and each KPI must have a target to verify when it has been met.

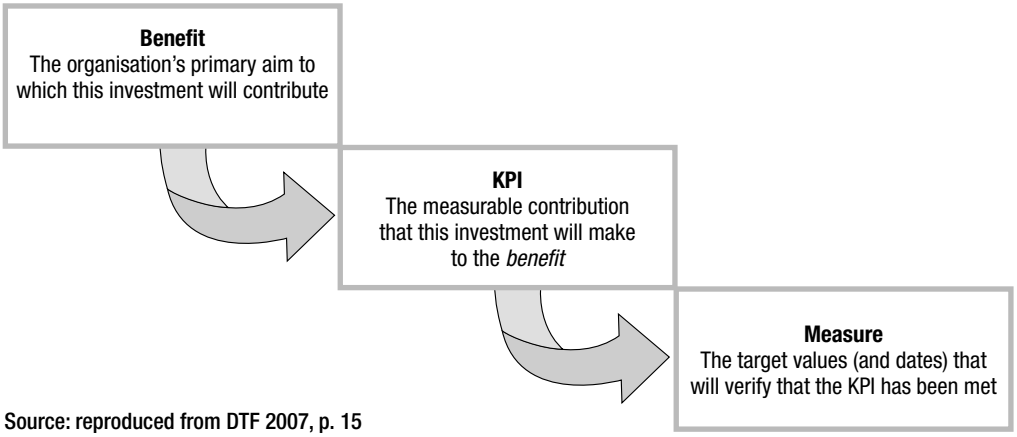
At the end of the workshop, the facilitator takes the whiteboard output and writes it up in the ILM format (as per Figure 2). The facilitator gives this to the investor and allows a one-day turnaround for any changes. Once any changes are incorporated, the ILM is complete and becomes the underpinning document for the rest of the components in the IMS.

The ILM is a tool used early on in the planning of an investment proposal used to assess whether the proposal should be developed further. In this sense, it can be seen as an example of *front-end evaluation*.

Front-end evaluation

Front-end evaluation is the general name for a range of evaluation techniques and approaches that can be applied to the examination of programs before they are implemented, or during the early formative

FIGURE 3: ASSIGNING KPIS AND TARGETS TO BENEFITS



Source: reproduced from DTF 2007, p. 15

stages of implementation. The value of front-end work is partly in its contribution to 'working out the kinks' in a program before it gets underway (van Beveren & Hetherington 1997).

Owen (2006) identifies five forms of evaluation: proactive, clarificative, interactive, monitoring, and impact (see Table 1). Front-end evaluation refers to the first three of these (Bost 2006). Of these three, the ILM fits within the *clarificative* form, which is concerned with:

- analysis and specification of the logic or theory of programs
- establishing the feasibility of program design
- encouraging consistency between program design and implementation
- providing a basis for program monitoring or impact evaluation.

(Owen 2006, p. 192)

As already demonstrated in the overview, the ILM—through its role within the overall IMS—seeks to achieve all of these things: it establishes a logic for the program/investment; tests its feasibility (through the judgement of the investor); provides a consistent basis for regular investment reviews for program monitoring during implementation; and provides a basis for gauging the impact of the investment through benefit reporting.

TABLE 1: THE FIVE FORMS OF EVALUATION

	PROACTIVE	CLARIFICATIVE	INTERACTIVE	MONITORING	IMPACT
Orientation	Synthesis	Clarification	Improvement	Fine-tuning	Justification
State of program	None	Development	Development	Settled	Settled
Major focus	Program context	All elements	Delivery	Delivery/outcomes	Delivery/outcomes
Timing	Before	During	During	During	After
Key approaches	Needs assessment Research review Review of best practice	Logic/theory development Evaluability assessment Ex-ante	Action research Quality review Responsive Developmental Empowerment	Component analysis Systems analysis Performance assessment	Objectives based Needs based Goal free Process-outcomes studies Performance audit

(Based on Bost 2006, p. 15; adapted from Owen 2006)

The role of program logic/logframe analysis within front-end evaluation

As noted above, a key approach within clarificative evaluation is the development of program logic or theory (also called *logframe analysis*—short for 'logical framework analysis'). Program logic is a program's *theory of action*: 'it is a theory about the causal linkages among the various components of a program: its resources and activities, its outputs, its short -term impacts and long-term outcomes' (Funnell 1997, p. 5). Program logic is usually graphically depicted as a table or a flow diagram. As per Funnell's description, the simplest form of logical framework is that shown in Figure 4.

In practice, the causal chain of outcomes can have as many steps as is necessary to establish the causal links effectively, as shown in the examples in Figure 5. In their flow chart form, logframes can map multiple logical chains (see Figure 6, top), and in their tabular form, they will often show a vertical chain of outcomes, with horizontal rows providing a highly variable extent of additional information, which may typically include items such as: success criteria, factors within and outside the control of the program, activities and resources, performance indicators, data sources, and assumptions and risks (Baehler 2002, p. 17; Funnell 1997; Owen 2006, pp. 197–198;); see Figure 6 for a detailed example.

Owen (2006, p. 195) indicates that program logic can be an end in itself, or it can be seen to include evaluation activity based on the conceptualised framework. As already seen, the ILM aims to do both; it specifies the investment logic, and—through its place in the IMS—underpins the approach to reviewing the investment throughout its life. Owen draws a distinction between more

FIGURE 4: COMPONENTS OF A SIMPLE LOGICAL FRAMEWORK

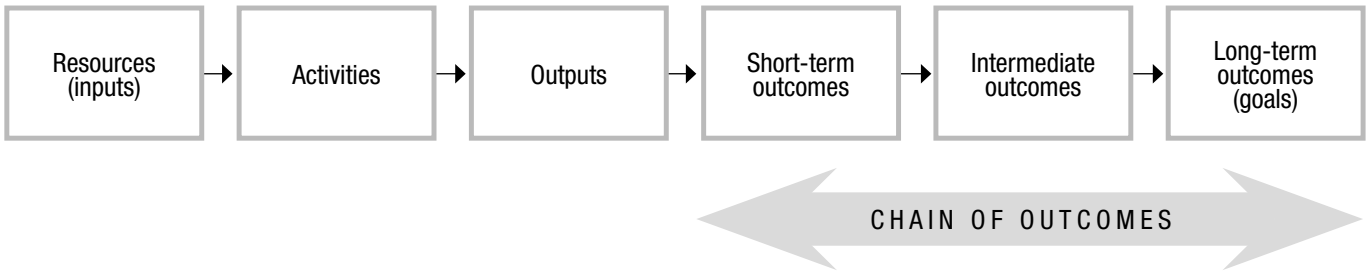
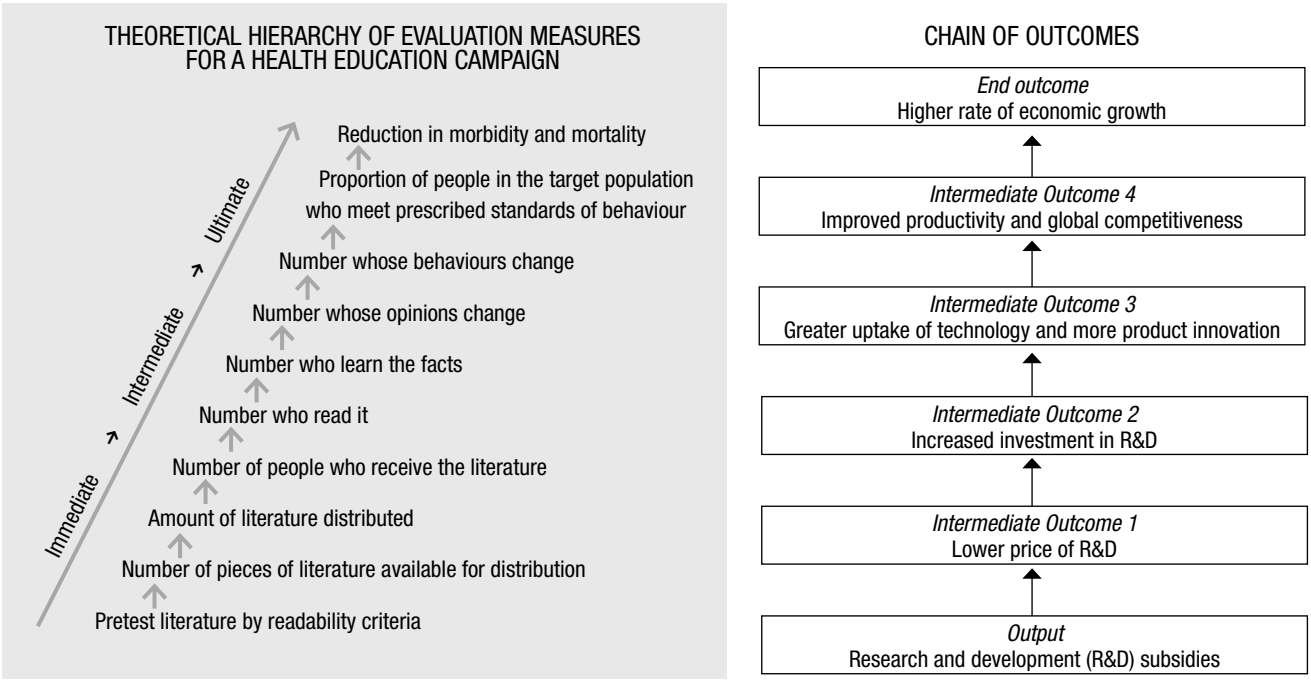
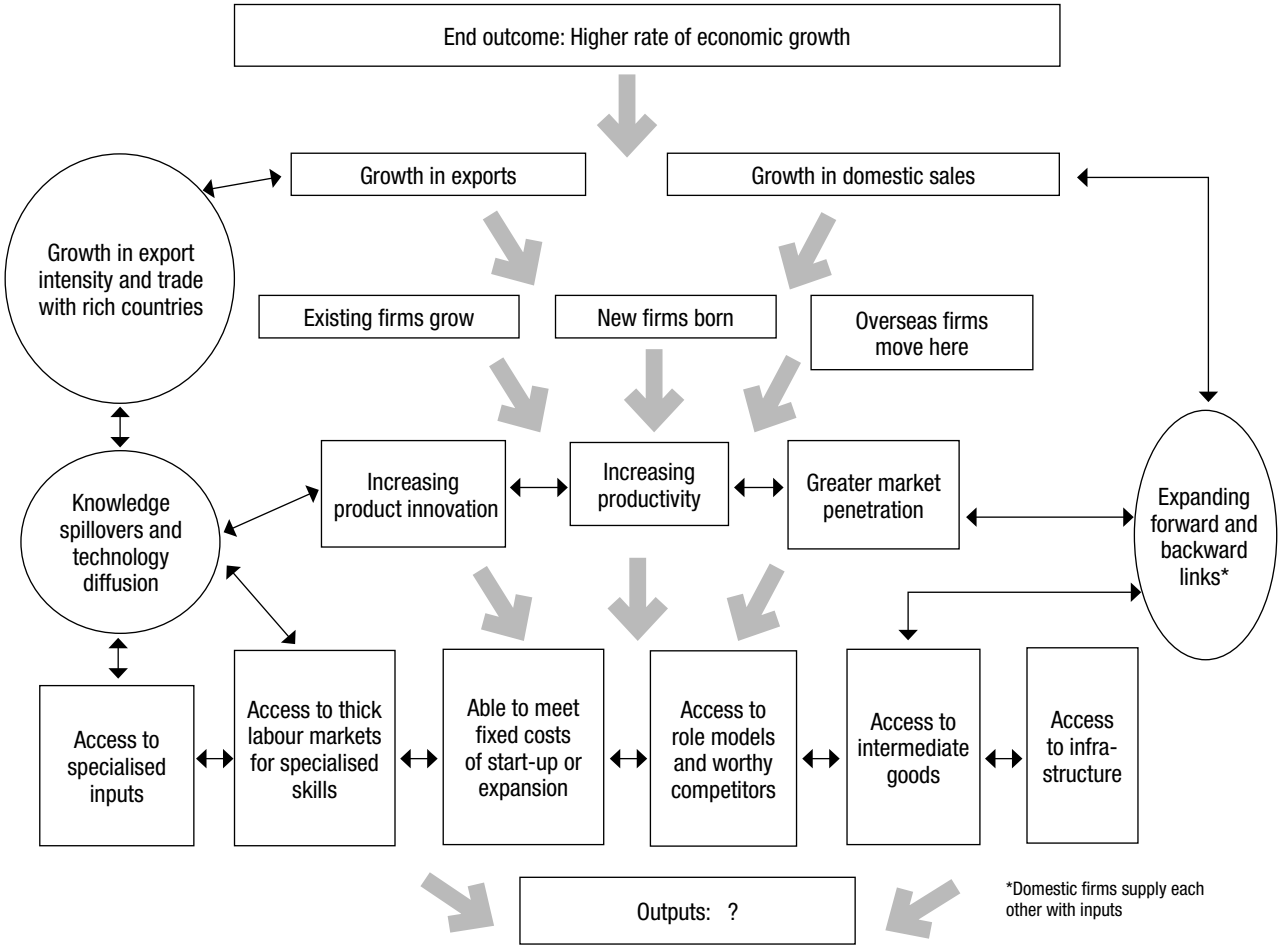


FIGURE 5: EXAMPLES OF PROGRAM LOGIC OUTCOME CHAINS



Sources: left—reproduced from Patton 1997; right—reproduced from Baehler 2003

FIGURE 6: MORE COMPLEX PROGRAM LOGIC: FLOW CHART AND TABULAR FORMATS



Outcomes hierarchy	TESTING THE CHAIN						MANAGING FOR OUTCOMES					
	A Assump-tions	B Evidence	C Factors within control (capability)	D Factors outside control	E Uncertainty (net of C and D)	F Weak link or strong?	G Success criteria	H Data sources	I Opportunit-ies for inter-agency collaboration	J Activities and resources	K Costs	L Opera-tional risks
Ultimate outcome	6											
Intermediate outcomes	5											
	4											
	3											
Immediate impacts or outcomes	2											
Output or class of outputs	1											

Sources: top—reproduced from Baehler 2003; bottom—reproduced from Baehler 2002

expanded logical frameworks that include program-monitoring information (such as the Baehler example in Figure 6, bottom, and the approach used by Funnell, 1997), and simpler versions used as basic accountability tools. Owen (2006, p. 199) notes that, 'a major criticism of the Logframe is that it cannot inform implementation decisions as the program proceeds'.

The main contribution of program logic to front-end evaluation is its capacity to provide, 'a convenient overview of project objectives and encourage attention to possible higher-level justifications, external conditions and the information needs of monitoring and evaluation' (Gasper 2000, p. 17). It can also have the value of taking a latent hypothesis about how a program will achieve its goals (doing *X* will deliver *Y*), and turning it into a causal chain that articulates the linking steps between X and Y, thereby revealing flaws or risky assumptions. Importantly, such assumptions can then be tested against existing evidence (Baehler 2003, p. 27; Owen 2006, pp. 196–197).

McLaughlin and Jordan (1999, p. 71) meanwhile argue that program logic can be used to tell a program's 'performance story':

> Telling the story involves answering the questions: 'What are you trying to achieve and why is it important?', 'How will you measure effectiveness?', and 'How are you actually doing?'. The final product of the Logic Model process will be a Logic Model diagram(s) that reveals the essence of the program, text that describes the Logic Model diagram, and a measurement plan. Armed with this information the manager will be able to meet accountability requirements and present a logical argument, or story, for the program.

The ILM has similar aims, and also situates itself as a storytelling device. It clearly shares a great deal in common with program logic. The next section explores these similarities further, as well as highlighting the differences.

Comparative analysis of the ILM and program logic

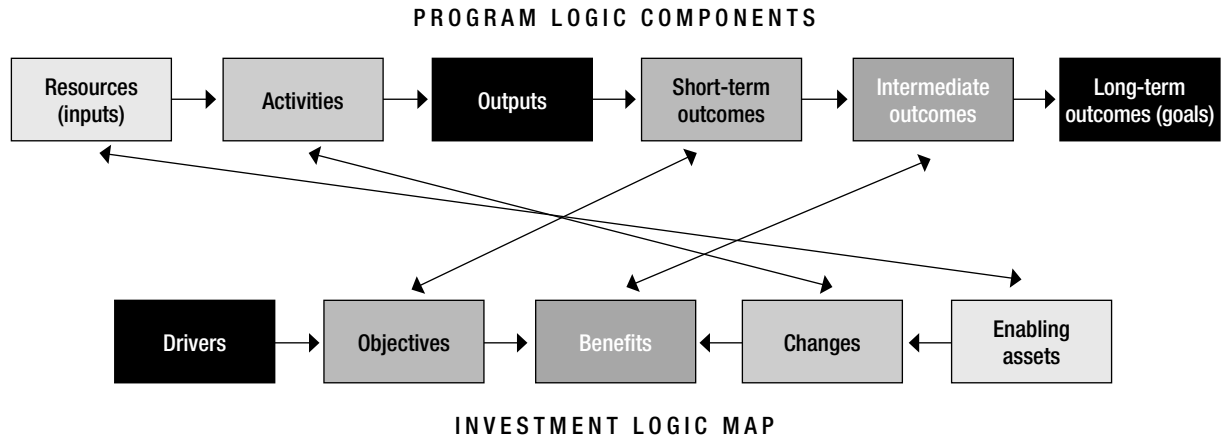
As seen in previous sections, the ILM and program logic have a number of features in common. They both:

- are logical frameworks that incorporate causal links
- are tools used at the front-end of projects, during their formative stage
- aim to 'tell a story' about a program/investment, providing a clear justification for the program, articulating its objectives and the outcomes (benefits) it seeks to deliver
- usually include performance/monitoring information that will be used to review the program during its life
- aim to present information in a graphical format that communicates the program narrative concisely and with clarity.

A closer examination of the components of each framework shows some of these similarities, as well as highlighting some of the areas of difference. As Figure 7 illustrates, there are some direct correspondences between the two frameworks, in that:

- resources generally correspond with the enabling assets (which will usually be ICT systems or capital assets for the ILM)
- activities carried out within the program correspond largely with the changes needed to bring about benefits in the ILM

FIGURE 7: COMPARISON OF THE BASIC COMPONENTS OF PROGRAM LOGIC AND ILM



- short-term outcomes correspond largely with the organisational objectives in the ILM
- intermediate outcomes correspond with the benefits the organisation will deliver by achieving its stated objectives.

One question that could be asked is: Why don't benefits in the ILM correspond with goals in the program logic? After all, within the two logics, these components represent the culmination or endpoint of the causal links. However, when the ILM is considered in its broader context, there is a step beyond the benefits that the organisation delivers: these are the broader 'enterprise' goals set by government. These enterprise goals also correspond to the 'portfolio' level in the hierarchy of project management noted previously. The value pyramid shown in Figure 8 illustrates this additional level of goals, beyond the benefits delivered by investment management. The 'value' level is represented here by the government's triple-bottom line, and in specific terms equates to the enterprise goals set out in the Victorian Government's 10-year vision statement for the state, *Growing Victoria Together* (DPC 2005; DTF 2008a).

The other obvious gap between program logic and ILM is the lack of an output component in the ILM. While not part of the basic logic chain of the ILM, outputs largely occupy the same conceptual space as the KPIs identified for each benefit in the ILM: outputs are the measurable contribution the program makes to the outcomes, in the same way that the KPIs are the measurable contribution the investment makes to the benefits.

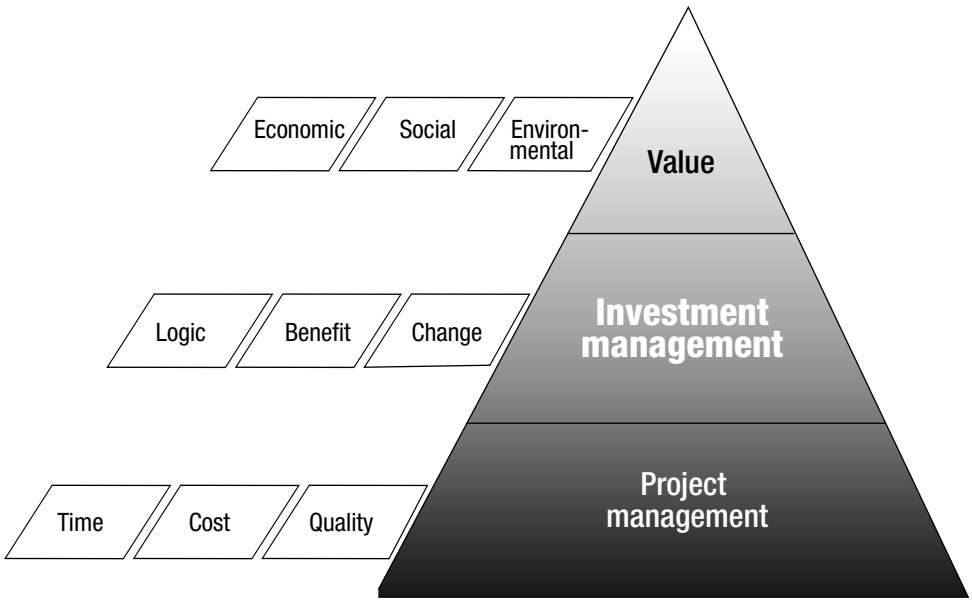
Comparing the two logic chains allows some general conclusions to be drawn about the thrust and intent of the ILM. The ILM disrupts the unidirectional chain of program logic by changing the ordering and linking between components. Its origins within the strongly project management driven and solution-focused ICT world suggest that is a deliberate strategy to shift the emphasis away from systems solutions. It is salient to note that the category of enabling assets (the component under which systems solutions appear) is the only optional part of an ILM. The emphasis is on identifying the drivers (as a threshold test to see whether the investment proposal is the classic 'solution looking for a problem') and on identifying the basic chain of outcomes (objectives and benefits). As previously stated, a key goal of an ILM is to justify an investment proposal, and to do so in the language of the investor.

The ordering and structure of the ILM reflects a dual purpose: first to answer the investor's main question (Is this a worthwhile investment?), and second, to raise the sights of 'solution architects' from the specifics of their proposed solution, to the level of organisational and enterprise outcomes.

'Gut-feel' decision-making

In *Blink*, Malcolm Gladwell (2005) argues that there can be as much value in decisions made in the blink of an eye, as in decisions made after months of rational analysis (p. 17). He provides examples of people—with high levels of skill and knowledge in a particular area—who can make snap judgements

FIGURE 8: THE VALUE PYRAMID



Source: reproduced from DTF 2007, p. 10

that turn out to be uncannily accurate. He also argues that too much information can reduce the quality of decision-making. Like a sportsperson who 'chokes' by becoming too consciously aware of their actions, too much data can sometimes diminish performance and hide the real story (Gladwell 2000).

Similarly, the ILM seeks to identify the critical information required to assist decision-making by the investor. With its time-limited workshop format, its small number of participants, and its emphasis on identifying only two or three drivers or benefits for a proposed investment, it aims to get to the core justification for the proposal. It forces a snap decision.

Ultimately, whether an investment proposal gets to move on to the next stage of development comes down to a 'gut-feel' judgement on the part of the investor about whether the story told by the ILM is a convincing one.

This high-pressure, 'script-writing workshop' approach to developing an ILM casts light on the dark underbelly of the approach. A good story about a program (or an investment proposal) says not only what the storyteller *wants* to happen, but also what is *likely* to happen. The pressure to tell a story without having access to the evidence to back it up can lead to a story that seems convincing, but which just isn't right. According to Gladwell (2005, p. 69), 'We have, as human beings, a storytelling problem. We're a bit too quick to come up with explanations for things we don't really have an explanation for'. The next section explores some of the risks inherent in this aspect of the ILM approach.

Drawbacks of the ILM

One of the necessary rigidities of the ILM is a very short chain of causality. Unlike program logic, where the chain of outcomes can be as long as needed to tell the full story, the ILM allows only objectives and benefits to be captured. An ILM workshop can achieve consensus that an investment will help to achieve objectives that in turn contribute to delivering higher level benefits. However, the gap between these steps may be so great that weaknesses in intervening causal links can go unnoticed.

In addition to using a truncated chain of outcomes, the ILM technique jumps between levels of causality in a way that creates further potential risk of weak or ill-founded causal links. As noted earlier, once benefits have been identified, participants in an ILM workshop are required to specify KPIs for each benefit (refer to Figure 3). The guidance states that the KPIs must be 'directly attributable to the proposed investment' (DTF 2008a, p. 9). In terms of program logic, this is essentially asking people to link a performance measure at the output level directly to an intermediate outcome.

Given that these KPIs are then used throughout the investment lifecycle to measure the investment's contribution to delivering benefits, it seems risky to make this link without fully articulating and testing the intervening causal chain. If there is an unidentified—and untreated—weakness in the logic, there is substantial risk that the measurement of the KPI will tell the program manager and investor nothing useful about delivery of the benefits. It may in fact lead to goal displacement, where focus and effort is directed towards achieving the KPI target measure while the benefit is untracked and undelivered.

Baehler (2003) argues that 'an asserted link between outputs and outcomes should receive support both from common sense understandings of cause and effect and from hard evidence' (p. 26). The ILM approach, in its effort to provide a simple and quick method of testing investment proposals, runs the risk of ignoring the importance of articulating program logic in detail, and building or sourcing evidence to support it.

It was noted at the start of this article that the ILM has been used to assess and prioritise investment proposals in the context of the annual state Budget. As noted previously, and as Figure 9 shows, this has been arrived at by taking a portfolio management approach to investments. In simple terms, this approach maps investment proposals on to the matrix shown in Figure 9. The proposals that are mapped to the top right-hand quadrant are those that contribute to what Baehler (2003) calls 'hinge outcomes' (p. 29)—the goals that government has identified as most critical to achieving change (in this case, the goals of *Growing Victoria Together*). However, without articulating detailed outcome chains and building these into a schematic that considers how programs relate to each other at each level of outcomes (along the lines of Figure 6, top), it is difficult to be confident that the individual investments will work together coherently to contribute to whole-of-government strategic goals. More importantly, without this detailed view of the 'theory of action' of a range of investments, it is impossible to test these assumptions.

As well as being a limited tool for assessing the relative value of investments, and their collective contribution to strategic goals, the ILM also has limited value in reviewing or evaluating investments through their lifecycle. It is here that the in-built rigidities of the ILM pose potentially their greatest risk. This article has noted that the design of the ILM suits it to telling a story about an investment proposal that aids gut-feel decision-making by an investor. At the developmental stage of a program, this is a valuable threshold test, and an efficient mechanism to gain support for the further development of a proposed intervention or investment. However, as the overview of the IMS has shown, the products of this short and sharp initial assessment are incorporated into subsequent planning and management of the investment throughout its lifecycle: first in the benefit management plan, which details how the KPIs identified in the ILM will be measured; then in the investment reviews, which periodically reassess the ILM logic; and finally in the benefit reports, which track the performance of the KPIs from the ILM.

Gasper (2000) argues that this use of logframes runs the risk of blocking program adaptation and learning, by carrying a fixed frame forward through the life of a program without updating it. A similar criticism by Owen (2006) was noted earlier in this article. Gasper argues that the value of a logframe diminishes 'as we move from project design through to post-implementation evaluation' (p. 19). A tool that performs well for basic accountability, or to provide a threshold justification for proceeding with a program, becomes less and less useful for evaluating its worth as it moves through its development, implementation and operational phases.

Gasper (2000, p. 21) warns of the risk of using logframes 'only because external funders demand it', arguing that this may lead to the logic being invented after a solution has been chosen, rather than being used to aid design and development. The origins of the ILM were very much as a 'testing tool' to challenge solution-focused ICT project managers to consider their proposal's contribution to higher level benefits. However, this runs the risk that the ILM will be viewed as a 'box to be ticked', rather than as a tool that adds value to program design. Gasper (2000, p. 21) contends that logframes approached in this way can result in a 'logic-less frame, where a pre-existing logframe format is used to accommodate a pre-existing design, rather than to help create a logical design in an appropriate format'.

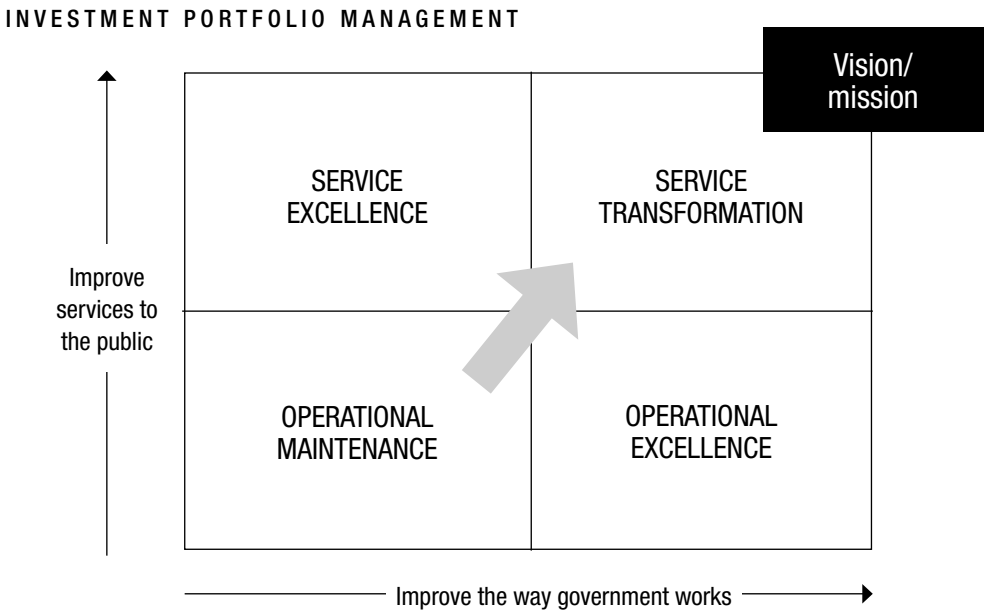
In seeking to get 'solution architects' to focus on benefits, and in striving to articulate a simple, compelling story to justify an investment proposal, an ILM can aid decision-making in the developmental stages of a program. However, precisely because it strives to be simple, clear and quick to develop, it runs the risks of oversimplification and inaccuracy—risks that it carries through the lifecycle of an investment, potentially blocking learning and adaptation. The next section considers how some of these risks could be reduced.

The way forward

The use of a short and sharp workshop format that engages the gut-feel decision-making skills of the investor is a strength of the ILM. However, if the commonsense view of informed opinion is not tested through more detailed enquiry and gathering of evidence, then the strength of the ILM threatens to become a weakness that can lead to failure of the program. Furthermore, the ILM's practice of using output-level KPIs to track outcome-level benefits, creates a significant risk of goal displacement through narrow, accountability-driven reviews. The development of a more robust program logic to back up the outcomes of the initial ILM workshop is one way of addressing these risks.

Considering a specific example will help to tease out the way in which these risks can be treated. In Figure 10, the 'value pyramid' first displayed in Figure 8, has been populated with a specific example. As noted above, the enterprise-level goal is drawn directly from the Victorian Government's *Growing Victoria Together* vision statement—'building friendly, confident and safe communities' (DPC 2005, p. 15)—and the benefits are drawn from the hinge outcomes identified for each goal—'crime will be reduced … and Victorians

FIGURE 9: CHARTING THE RELATIVE CONTRIBUTION OF INVESTMENTS TO GOVERNMENT STRATEGIC GOALS



Source: reproduced from DTF 2007, p. 40

will feel safer' (DPC 2005, p. 16). The KPI for the investment ('increase forensic matches') is an output measure based on the capabilities of new ICT systems that 'will centralise vital information so police can access intelligence more easily and secure speedier arrests … [and allow] a significant increase in the number of [DNA] samples scientists can process each year' (Bracks 2006).

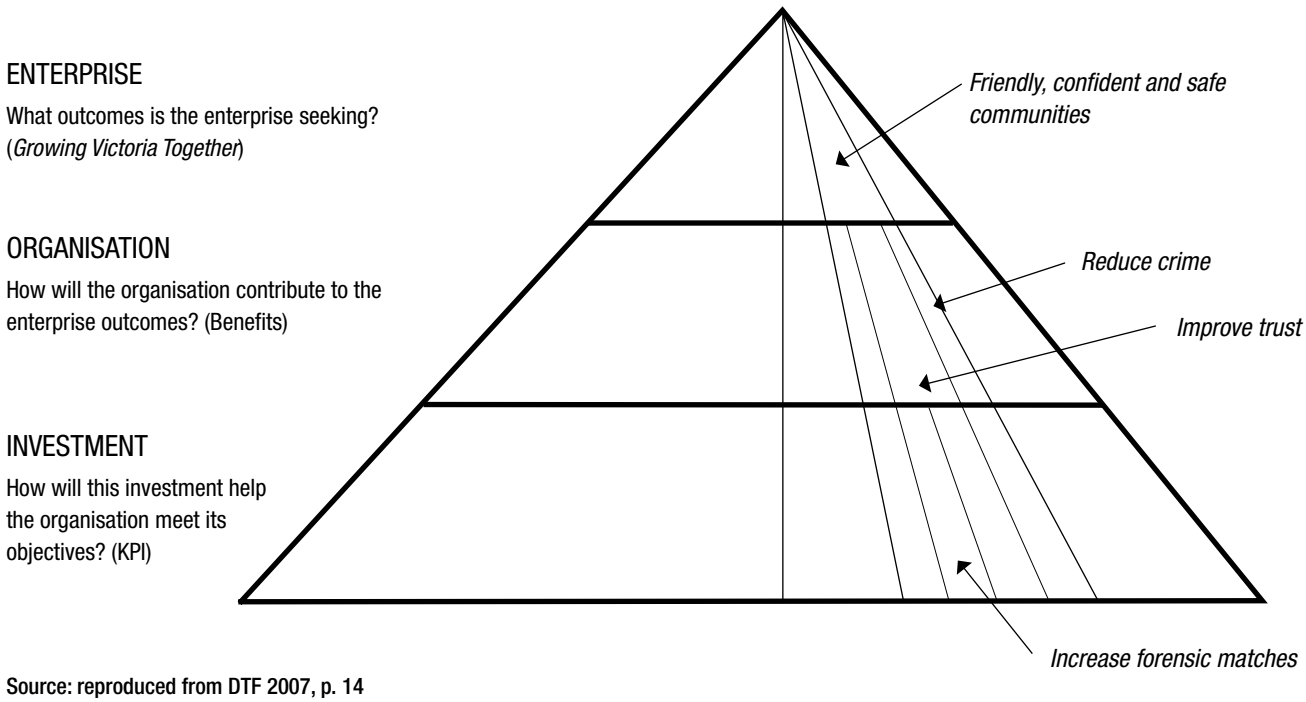
This is a significantly truncated chain of outcomes. However, its strength can easily begin to be tested by extending the chain with intermediate outcomes, which can help both to identify potential weaknesses, and build confidence in the causality. As per the example of Baehler (2003), adding some information about assumptions and risks connected with each causal link starts to provide a more complete picture. Figure 11 shows a possible chain of outcomes, suggesting that there are a number of levels, not included in the ILM logic, where either monitoring of impacts or direct program intervention may be required to bolster assumptions and militate against risks.

This relatively simple enhancement of the ILM logic could then be extended further along the lines used by Funnell (1997) and Baehler (2002), as exemplified by the matrix in Figure 6, bottom. This approach allows each step in the outcomes hierarchy to be tested, and then targeted individually for either monitoring or specific intervention. As well as strengthening (or exposing hidden weaknesses in) the causal chain, it can also reduce the risk of goal displacement. It does this by assigning measures at the appropriate level in the causal chain: the KPI of 'increased forensic matches' would link at the output level to 'establish Forensic Information Management System', rather than to the higher level outcome of 'reduced crime'. This reduces the risk of making untested assumptions that the outputs of the ICT systems are contributing to the achievement of higher level goals. This risk can be further reduced by including targeted intervention activities and monitoring of outcomes for each link in the chain of outcomes.

It is not difficult to take this more detailed program logic a step further to support comparability of investment proposals, allowing their relative merits to be considered against whole-of-government strategic goals (at the enterprise, or portfolio, level). Assigning scores to each level of the causal chain—for example, against operational risk factors, factors within and outside the control of the program, and against the strength of evidence to support assumptions—would allow assessments to be made of the likely value of a particular investment, compared to an alternative investment targeting the same goal.

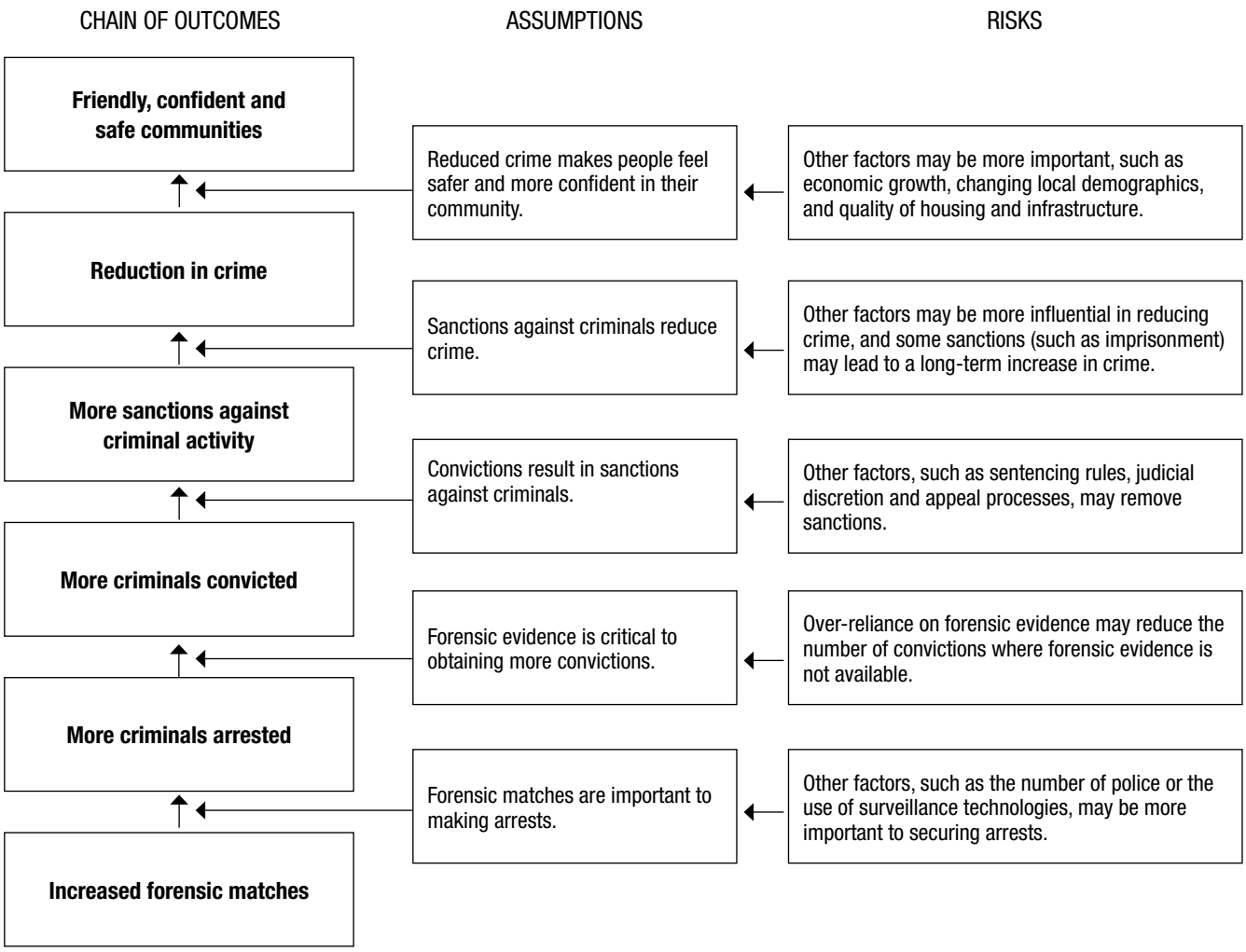
Drawing in other aspects of evaluation practice can address some of the general drawbacks of program logic. In particular, it is important to consider the opportunities for program adaptation and learning that can potentially be 'locked-out' by program logic's focus on a linear chain of causality. By combining program logic with other evaluation forms, and relevant techniques such as needs analysis, research synthesis, action research, empowerment evaluation, and objectives-based approaches (Owen 2006), a full picture of a program or investment can be developed. The

FIGURE 10: VALUE PYRAMID FOR THE FORENSIC INFORMATION MANAGEMENT SYSTEM



Source: reproduced from DTF 2007, p. 14

FIGURE 11: EXTENDED CHAIN OF OUTCOMES FOR THE FORENSIC INFORMATION MANAGEMENT SYSTEM



intended benefits of an investment can be tracked throughout its lifecycle, and the unintended benefits (or negative impacts) can be identified and analysed.

Incorporating evaluation practice into the IMS

Fundamentally, the drawbacks identified—and possible enhancements proposed—are less about the ILM itself, and more about its role and functioning within the overall IMS. The advantages of the ILM when seeking to engage senior decision-makers (quick, simple and narrowly focused) become disadvantages when extended across the full lifecycle of an investment.

For the most part, the IMS is fast and light on its feet; that is, it is more a simplified process of accounting for benefits than a review or evaluation approach. Within the IMS, the only heavy hitting occurs through the business case, which, for any large investment, is a detailed document built up in accordance with extensive guidance provided by DTF (DTF 2006). In Victoria, business cases based on this guidance are required for any proposed government asset investments of $5 million or more (DTF 2006, p. 33). Best practice business case development already incorporates a range of evaluation techniques, particularly front-end techniques such as needs assessment, research synthesis and benchmarking.

However, while the business case guidelines reference the ILM within the 'strategic assessment' phase of business case development (DTF 2006, p. 18), they do not include any advice about extending or building on this investment logic. Strengthening and testing of the ILM could be incorporated into the IMS by including guidance about the development of more robust program logic as part of the overall business case development process. Review and monitoring of this more detailed program logic could be built into the investment lifecycle by incorporating it into guidance for Gateway Reviews. In this way, the IMS could retain its 'light touch' and its focus on engaging the investor, while the real grunt work of evaluation

could be established in the business case and then carried on through the investment lifecycle by using a range of evaluation techniques in the lead-up to periodic Gateway Reviews.

These changes would strengthen the focus on impacts and outcomes, placing further emphasis within the IMS on program management and managing for outcomes, as distinct from project management.

Conclusion

This article has looked at the ILM, starting from its origins as a tool to engage senior government decision-makers (investors) and to focus ICT project managers and system developers (solution architects) on the importance of telling a convincing story about their investment proposal. It has considered how this intention behind the ILM sat within a program management, as opposed to project management, philosophy.

It has concluded that the ILM is a useful tool for high-level decision-making at the front-end, or in the developmental stages, of a project. However, it has also argued that the ILM—because of its pivotal role in the overall IMS—has significant weaknesses. Specifically, it is too narrow and rudimentary a tool to support the monitoring and review of an investment throughout its lifecycle. This article has argued that the ILM provides a useful starting point for investment management—and is potentially a useful accountability tool—as long as its logic is extended and tested, supported by evidence, and bolstered by other evaluation techniques. In particular, this article concludes that the ILM needs to be underpinned by a more detailed and fully realised program logic, if it is to counter its potential weaknesses and deficiencies.

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