

Building a Dynamic Scenario Based Forecast

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EY

Building a better
working world

Welcome to scenario based forecasting

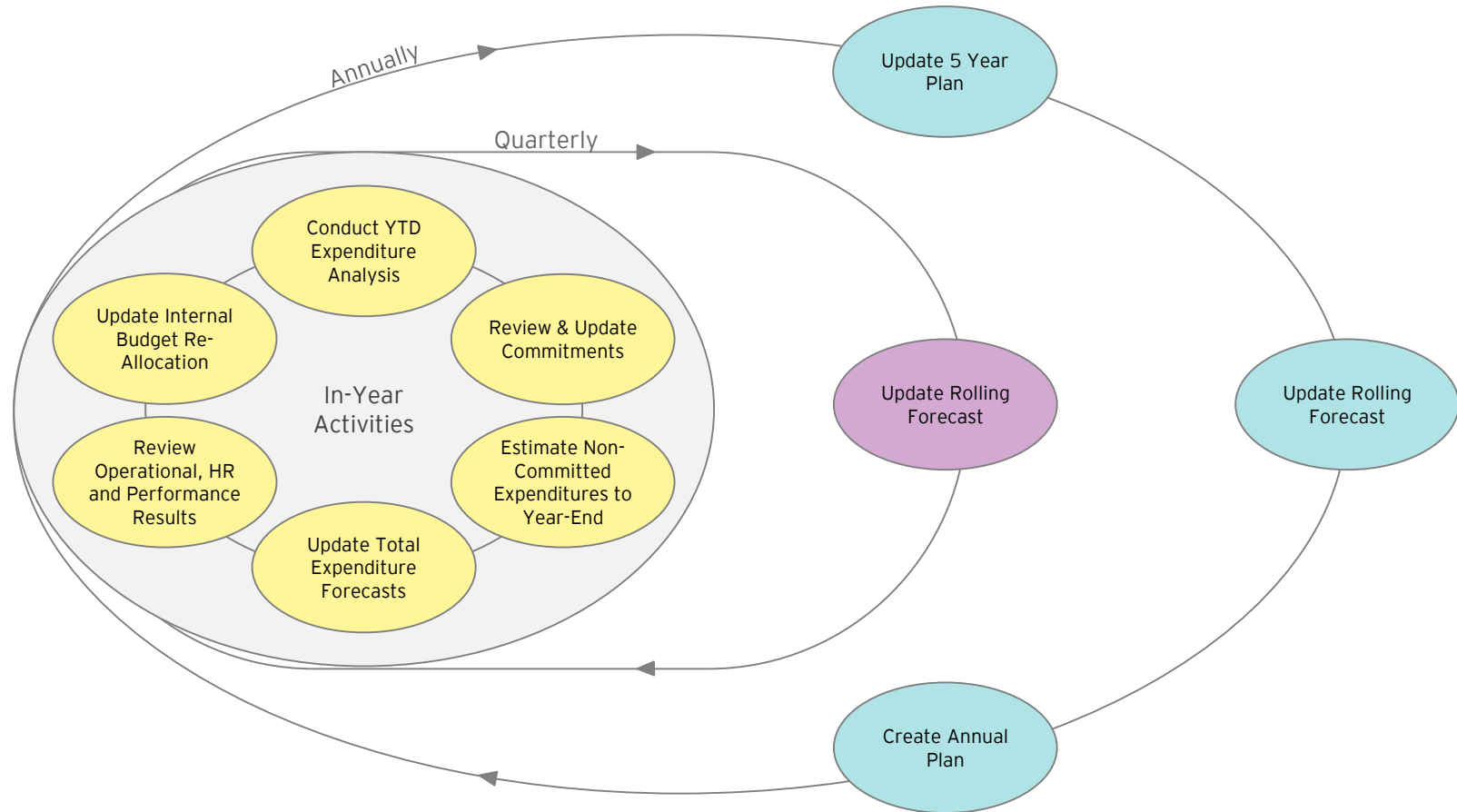
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|--|--------|
| 1. Introductions | 5 min |
| 2. Observations on rolling forecasts & scenarios | 25 min |
| 3. Creating a better periodic plan | 25 min |
| 4. Introduction to the NISP case study | 15 min |
| 5. NISP Part 1: Metrics & Volume Discussion | 20 min |

Break for Keynote & Lunch

- | | |
|---|--------|
| 6. NISP Part 2: Cost Types & Work Effort Discussion | 20 min |
| 7. NISP Part 3: Discussion of Options | 20 min |
| 8. Discussion with a CFO | 40 min |
| 9. Wrap up & final Q&A | 10 min |

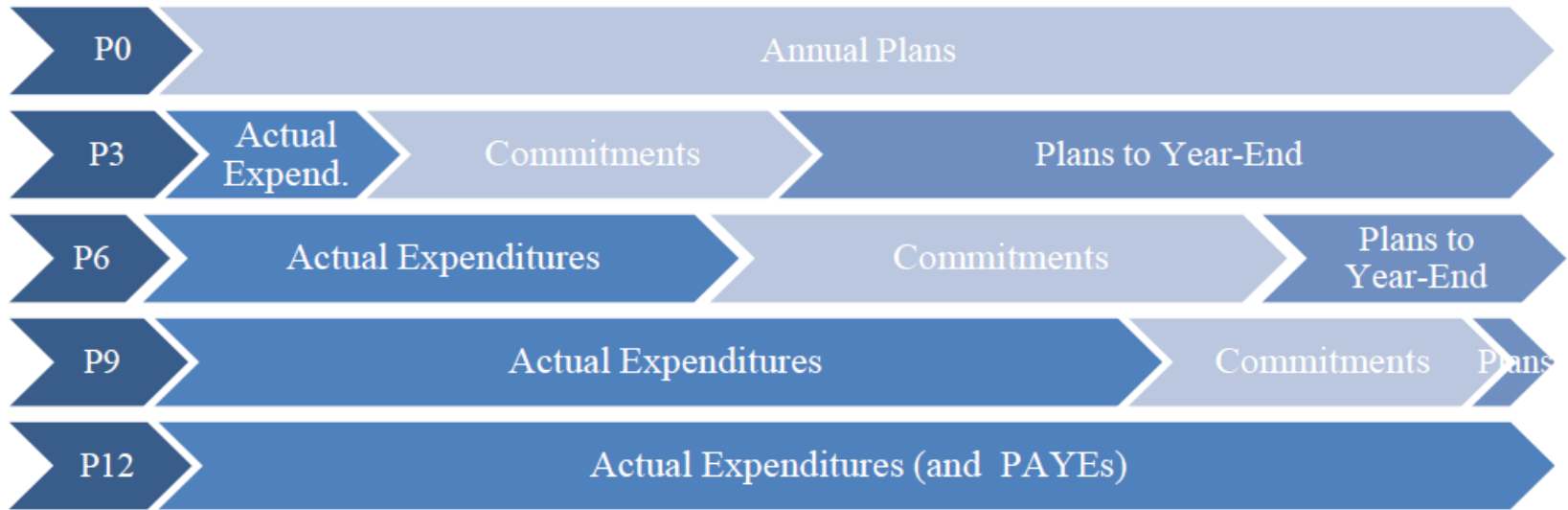
Key Steps in Forecasting

- ▶ Retain existing processes but EXTEND to reflect quarterly rolling forecast and multi-year plans



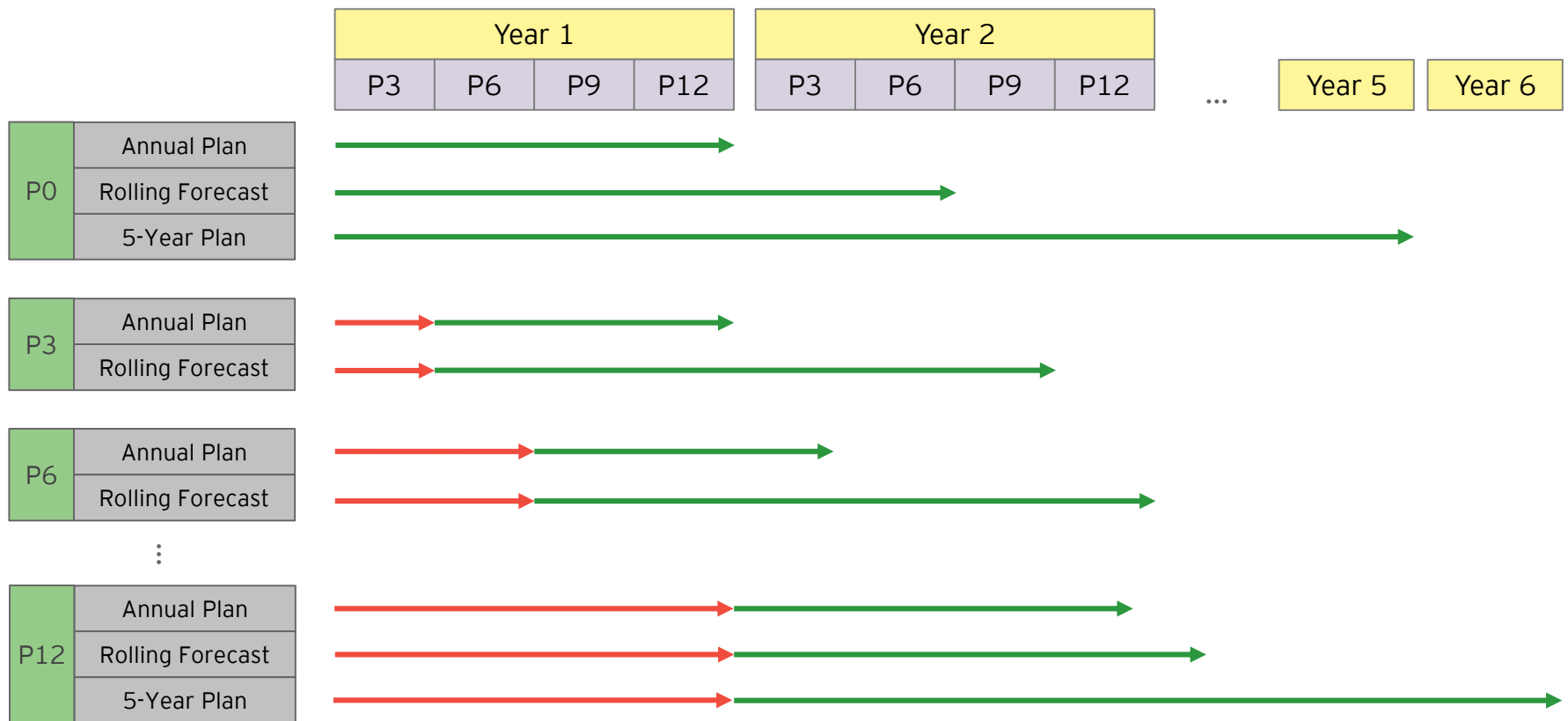
Current Process for In Year Forecasts

- ▶ Each update ends with the fiscal year, tied to spending authority from Parliament
- ▶ But business planning continues, both for day to day operations & projects, albeit without commitments
- ▶ One does not assume that all spending stops



Key Features of a Rolling Forecast

- ▶ Extends beyond, and can be independent of, the fiscal year
- ▶ Each forecast iteration replaces one period of forecasted data with actuals then extends the forecast by one period
- ▶ Each RFC covers the same length of time, e.g. 6 quarters

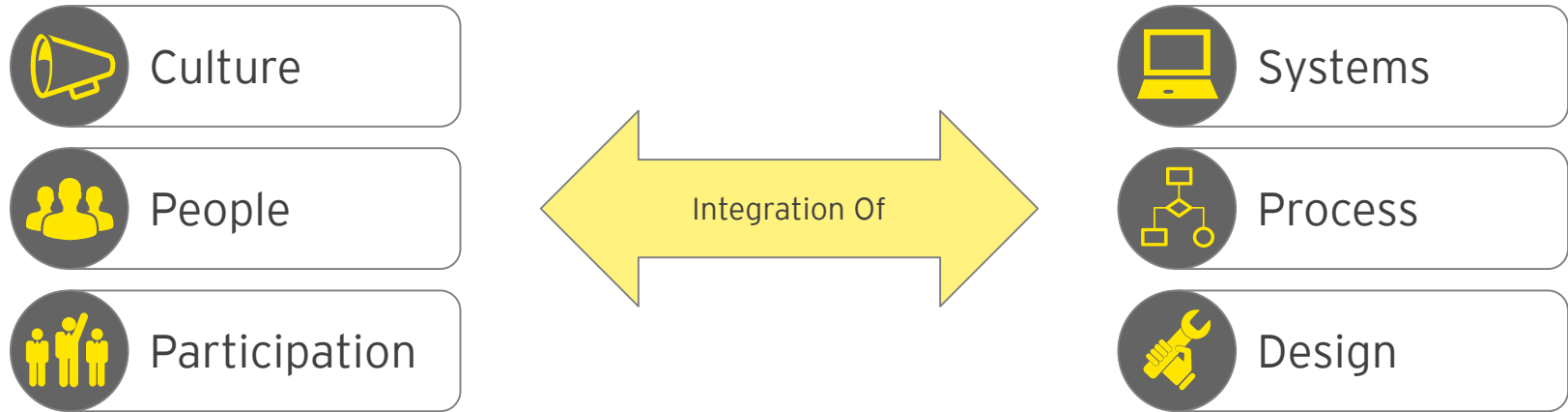


To be Successful A Rolling Forecast Must Be ...



- ▶ **Cost-effective**
- ▶ **Actionable**
- ▶ **Reliable**
- ▶ **Timely**

Factors for Successful Implementation



Overcoming Challenges

Challenge



It's not needed. The fiscal year is what we live by - parliamentary authority, reporting, budgets, etc.



We would need new people, skills and technology. The cost is too high



Forecasts will probably be inaccurate. The further out we look, the more inaccurate we'll be.

Solution / Idea

The fiscal year is arbitrary and has no connection to the underlying cycle, so why stop with a fixed date

Value - much cheaper to have greater visibility than to react to unforeseen situations

Still better - forecasting the possible ≠ predicting the possible

Scenarios versus Options

Scenarios

- ▶ Outcomes or events that might occur at some point in the near or distant future
- ▶ Often fall outside of the current business environment and challenge the norm
- ▶ May require different analytical tools and capabilities
- ▶ Key challenge is to envision them and discuss them openly, far enough in advance to be able to act

Example

Impact of self-driving cars on traffic laws and parking enforcement

Options

- ▶ A (more) concrete idea actively being considered and requiring analysis
- ▶ Usually seen as adjustments to the existing business, and shorter term
- ▶ Fit within current modelling and business structures / capabilities
- ▶ Key challenge is the analysis itself, since details and timing are often critical

Example

Planning for an X% reduction in police dedicated to traffic laws and parking

Scenarios: A Real Example¹

March 2017

*"Royal Dutch Shell sells almost all Canadian oil sands assets"*²

Why?

Months of deliberation "conclude[d] that the energy industry was changing fundamentally - in a way that could turn the profitable oil sands operation into a liability"¹

How?

The "scenarios" team concluded that global oil demand might peak in a decade, due to faster than expected reductions in alternatives to fossil fuels such as solar, wind, and electricity

If that scenario materialized and Shell still owned oil sands assets then
"you were - gosh, forgive me - f---ed"¹

Key Takeaway

Shell did not conclude that this *would* happen, just that it *could*, and the consequences of it were massive. And Shell won't know if it made the right decision until perhaps 2030!

*Shell's Challenge - "Minimize the Maximum Regret"*¹

¹ Fortune magazine, February 2018, "Shell Faces 'Lower Forever'"

² OilPrice, March 2017, "Shell Sells Almost All Canadian Oil Sands Assets"

Scenario Planning

- ▶ Open-minded and generally long term assessment of possible outcomes
 - Encompasses a wide spectrum of possible outcomes, from the highly unlikely to the highly probable
 - Focus on the 'the art of the possible'
 - Objective is to position oneself to avoid or take advantage of certain circumstances, both positive & negative
- ▶ Often best handled by a dedicated team
 - Avoids conflict with day-to-day challenges
 - Draws on different skills
 - Expands the analytical time horizon to years and even decades

Assessing & Planning for Options



- ▶ Understanding our current situation and planning for a better future:
 - How do things look 'as is', i.e. without options?
 - What do we need / want to add to (or subtract from) our business?
- ▶ Understand key business drivers
 - 'Levers' that affect our performance
 - Getting a full range of options

What Is

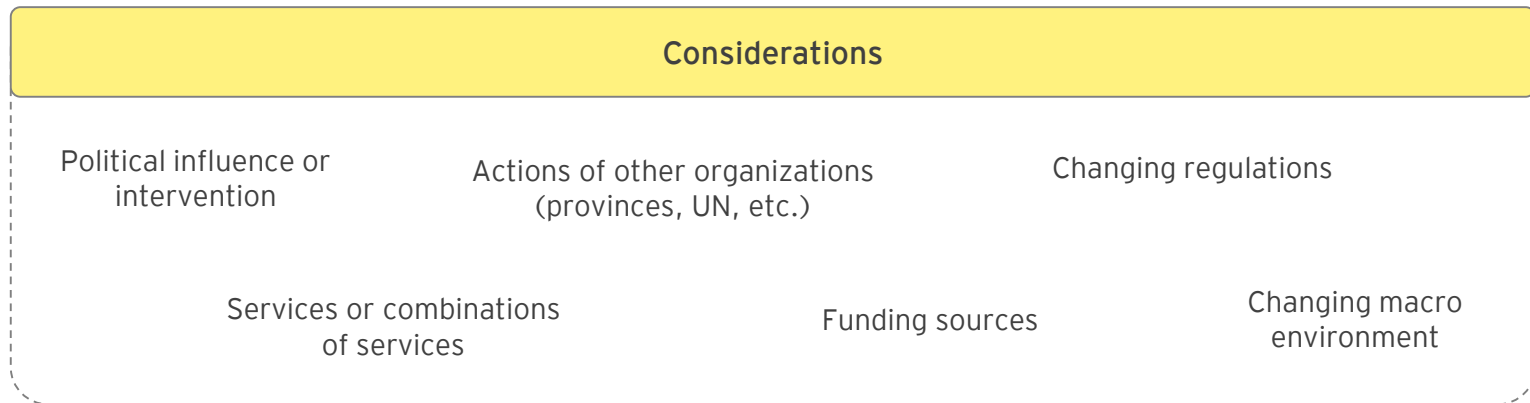
What Do You Need to Know or Have?	Why?
Baseline or 'as is' position	Must have a starting point to compare against
At the same level of detail as your impact analysis	Cannot change what you don't have
External / macro & internal metrics	Act as drivers for both baseline & options/scenarios
Options to select from	Something to add to or subtract from the base
Similar time horizons	Hard to compare & select from options that are both very short term & very long term (e.g. price change vs. new market entry)
An open mind	Willingness to consider the unlikely or unpopular

What Could Be

- ▶ How we look at options:
 - Best assessed in binary fashion, i.e. include or exclude (otherwise one has a virtually infinite number to consider)
 - Also best assessed on a mutually exclusive basis for the same reasons
 - Without this, there would be far too many options
 - No need to flesh each option out in full detail (i.e. budget line items) until final decisions are made

Consequences

- ▶ Consequences for Clients & Potential Clients, Suppliers, Regulators, Influencers (and more):
 - Immediate to longer term actions
 - Tangible & measurable vs. intangible & harder to measure impacts
 - And include your planned responses to their responses (ripple effect)



Example

If the US government tightens or loosens immigration rules, how will that impact the flow of immigrants to Canada?

Example: Marginal vs. Average based Forecasts

Existing organizational IT budget is \$10M, and is currently charged to four programs / agencies (Average of \$2.5M each). NISP is added, but only \$500K additional IT investment is required for laptops.

Average

Current IT Budget	\$10,000,000
Additional IT Expenditure	\$500,000
Total IT Expenditure	\$10,500,000
Number of Programs	5
Average Exp. / Program	\$2,100,000

Marginal

Laptop Expenditure (NISP)	\$500,000
Incremental IT Expenditure	\$0
Total IT Expenditure (NISP)	\$500,000

Other Considerations:

- ▶ Is there a requirement or policy for one or the other?
- ▶ Average approach triggers impacts on other programs or agencies, which is especially problematic when average costs increase
- ▶ An additional option would be to charge the average of existing IT expenditure to each of the five programs, and allocate the incremental amount to NISP (i.e., $\$10\text{M}/5 = \2M per program; + \$500K for NISP incremental laptop expenditure).

How do you Want to Use the Forecast?

- ▶ What decisions might the organization make based on the forecast?
- ▶ What actions might be taken?
- ▶ Who will be most impacted by the forecast?
- ▶ What if the forecast is wrong?
- ▶ Where might it be wrong?
- ▶ What can I do to improve forecast accuracy?

Variations: Looking Back

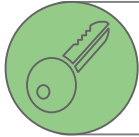
- ▶ Variations are the inevitable result of assumptions and circumstances to matching forecasts
 - ▶ But its NOT the variations themselves that need to be explained
 - ▶ Rather, look behind the variations at the assumptions & drivers that drove the budget/forecast amounts and comment on why they differed:
 - ▶ Compensation cost exceeded budget/forecast because headcount exceeded plan
- ↓
- ▶ Compensation cost exceeded budget/forecast because several planned retirements were deferred until P6 of next year

Better Budgeting & Forecasting



Key Drivers of Bad Plans

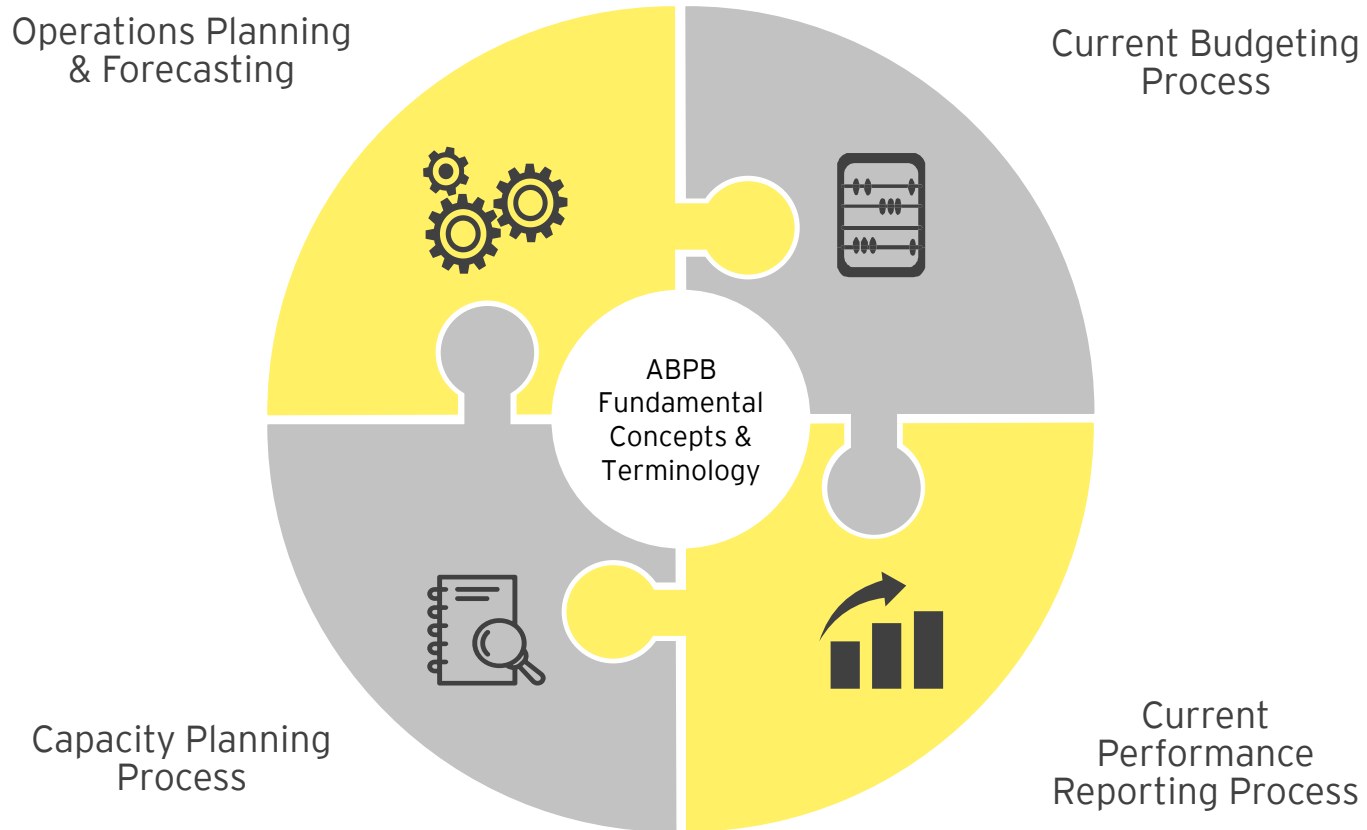
- ▶ Lack of planning
- ▶ Excessive focus on financial data
- ▶ Lack of linkage to business operations



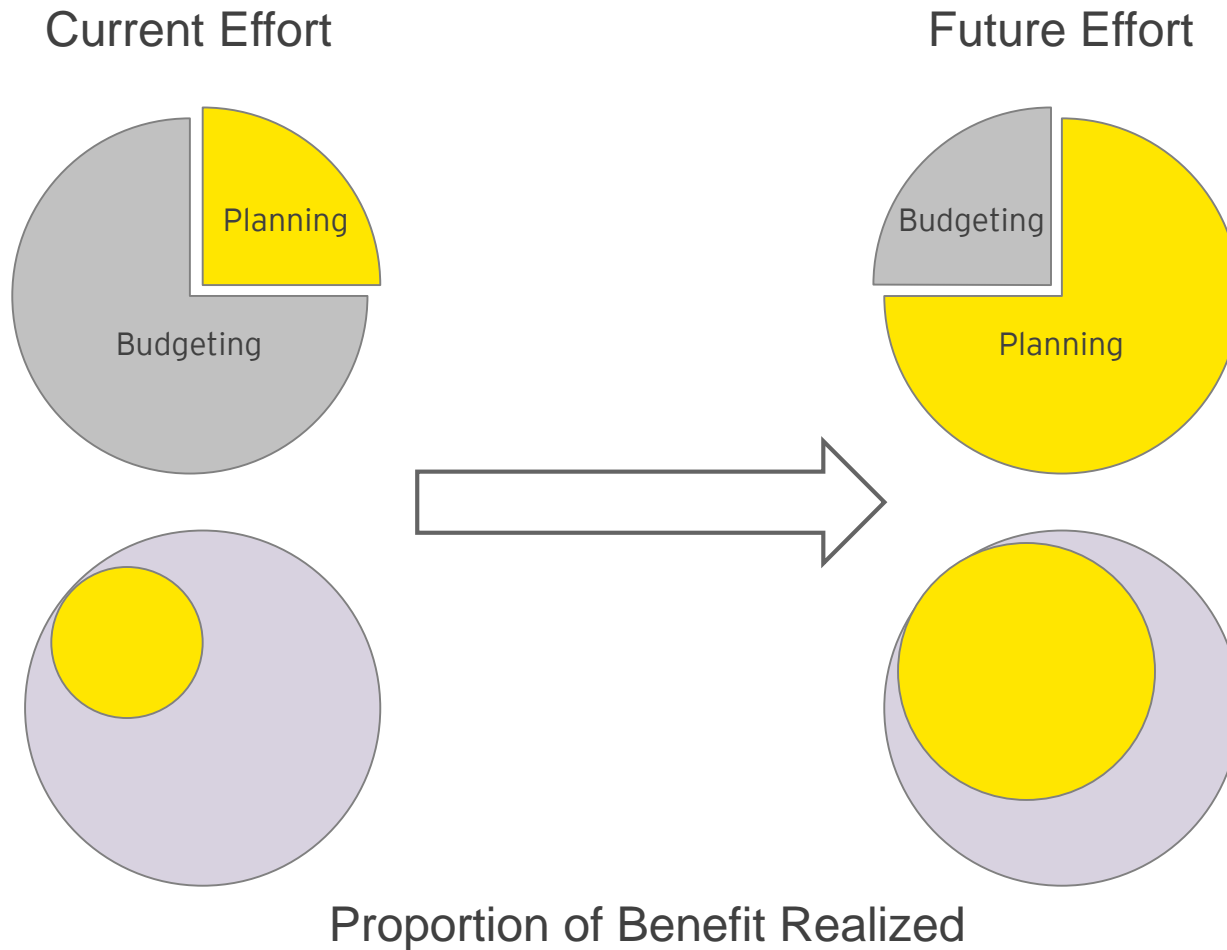
There IS a Better Way

- ▶ Draws on operational planning, capacity planning
- ▶ Incorporates performance management
- ▶ Leads to a process valuable to both the languages of operations and finance

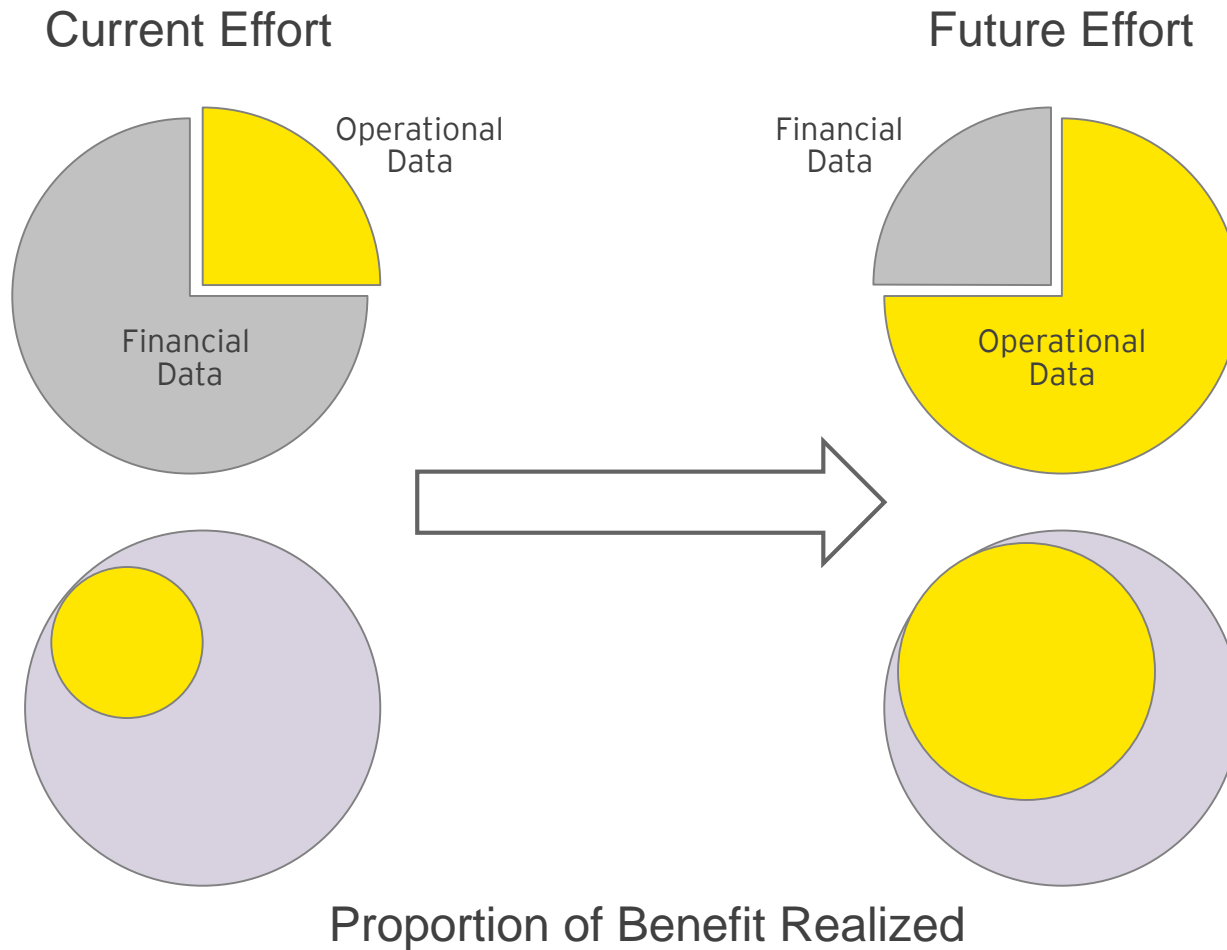
The Inter-Relationships of ABPB



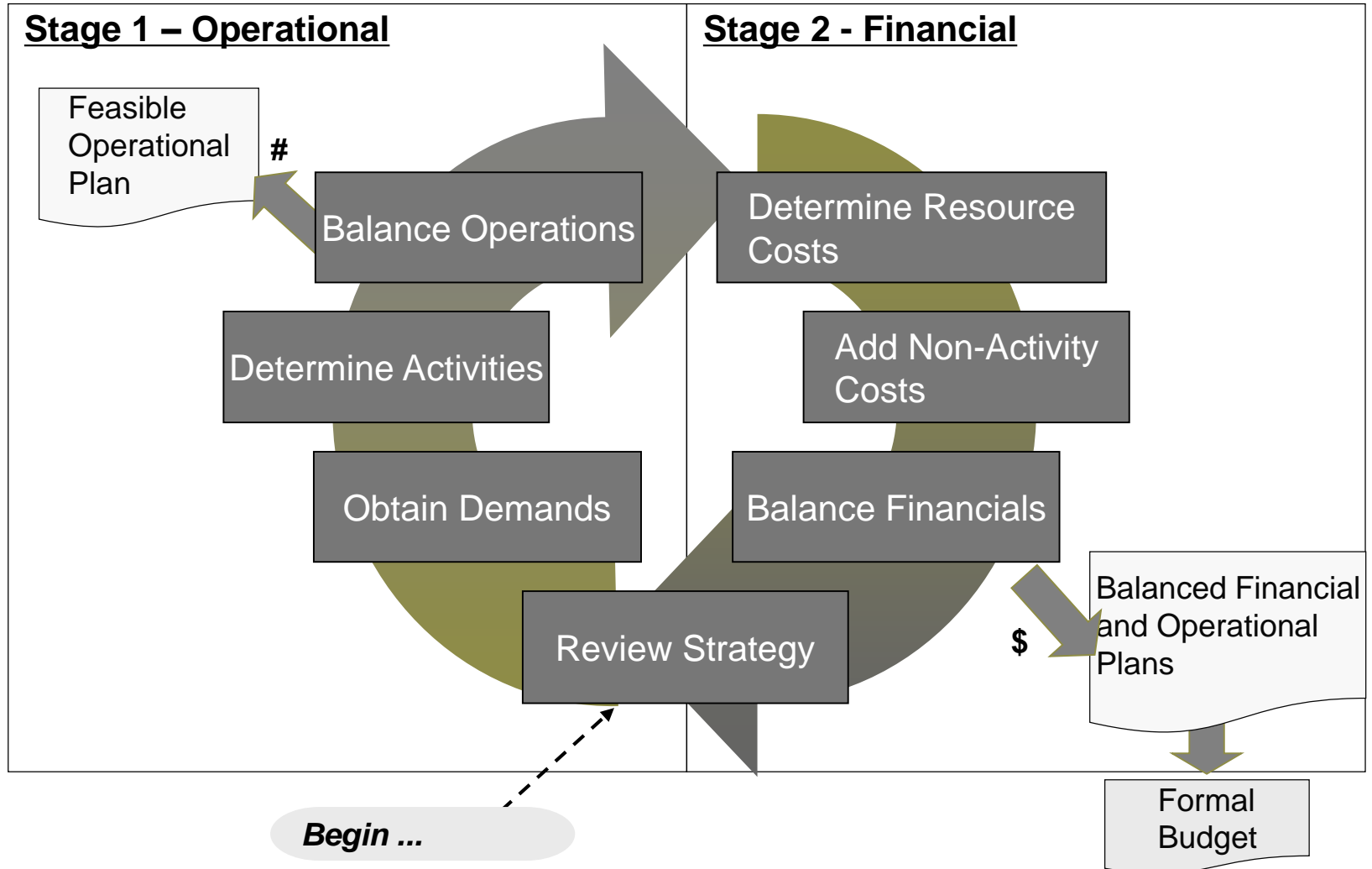
Shift Effort from Budgeting to Planning



And From Financial to Operational Planning

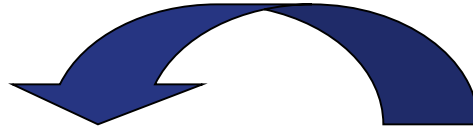


Overview of The Closed Loop



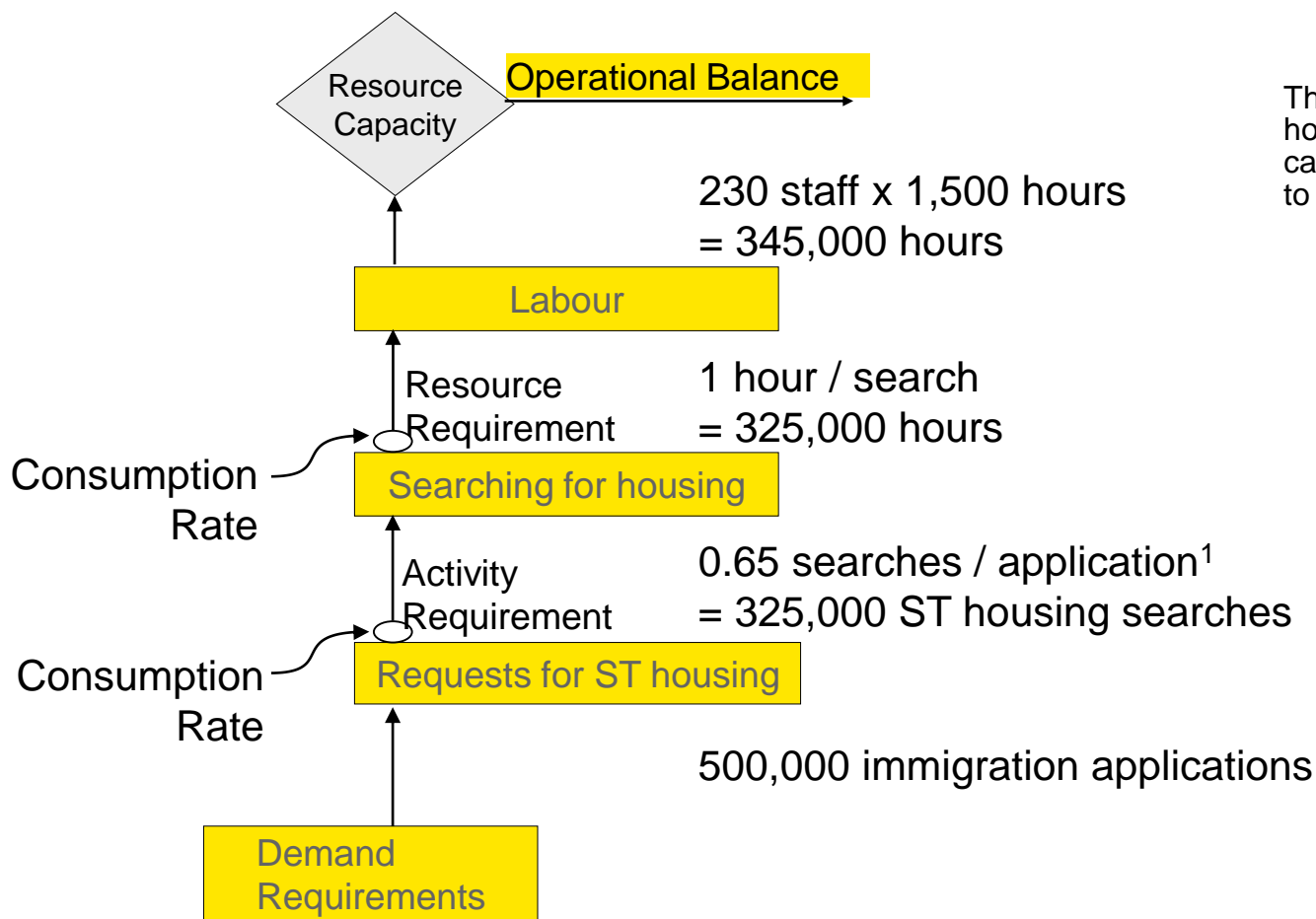
Let's Look at Our New Agency

Finding short term accommodation for new immigrants



- Activity and resource consumption rates based on current ABC information
- Assume:
 - Annual period
 - Financial target is for funding to equal expenses, +/- 1%
 - Homogeneous product
 - Some buffer (or contingency) capacity to meet demand peaks, unplanned absences, etc. may be desirable and will be included in activity and service cost

Stage 1 - Operational Balance

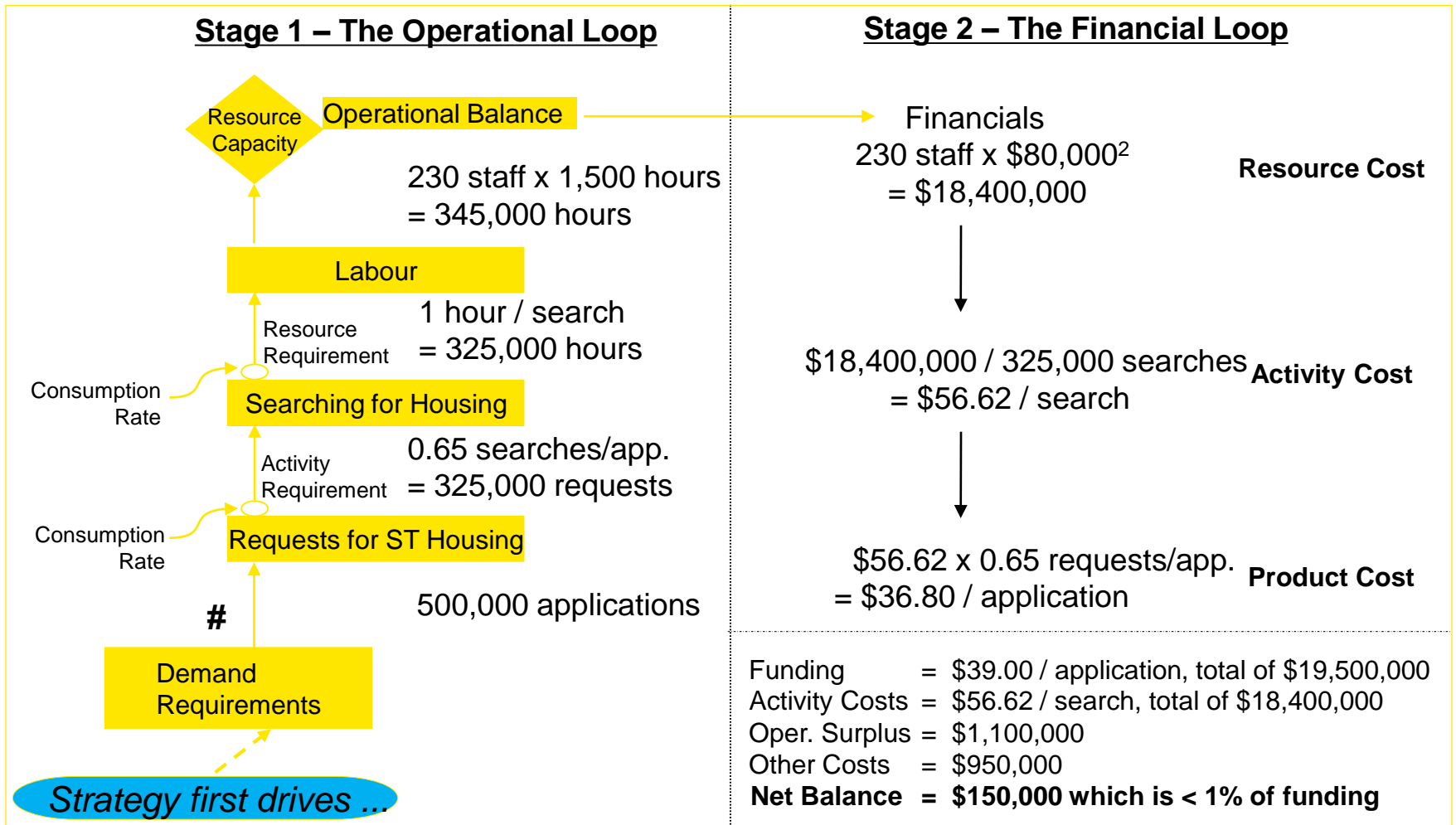


This model includes 20,000 hours of buffer (or contingency) capacity, but we will come back to this concept later.

Strategy first drives ...

1. Applications may be for multiple persons & some applicants do not need housing, hence < 1.0

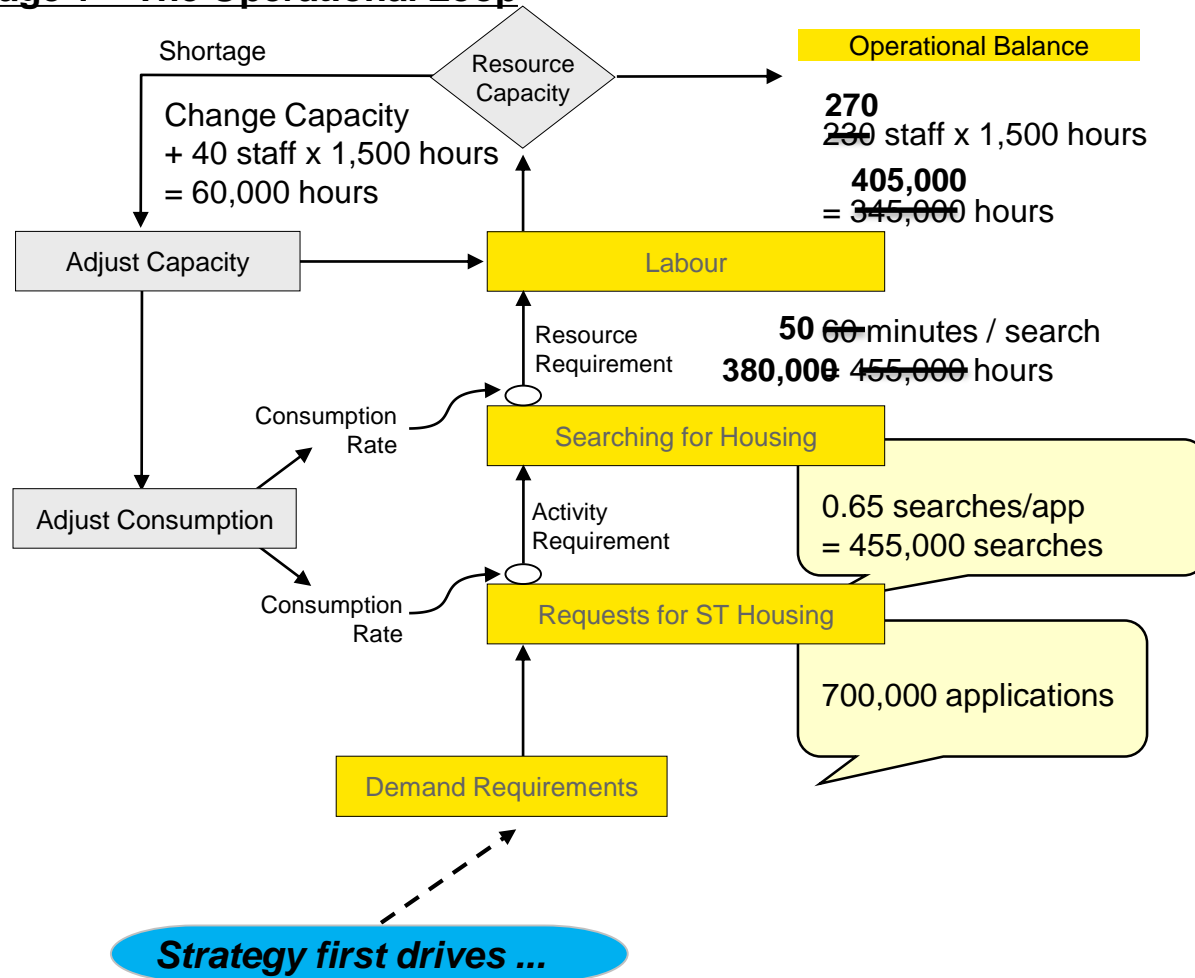
Stage 2 - Financial Balance



2. Fully burdened with all benefits

The Effect of a Changed Consumption Rate

Stage 1 – The Operational Loop



Web search technology or process improvement allows us to reduce search time to 50 minutes/search

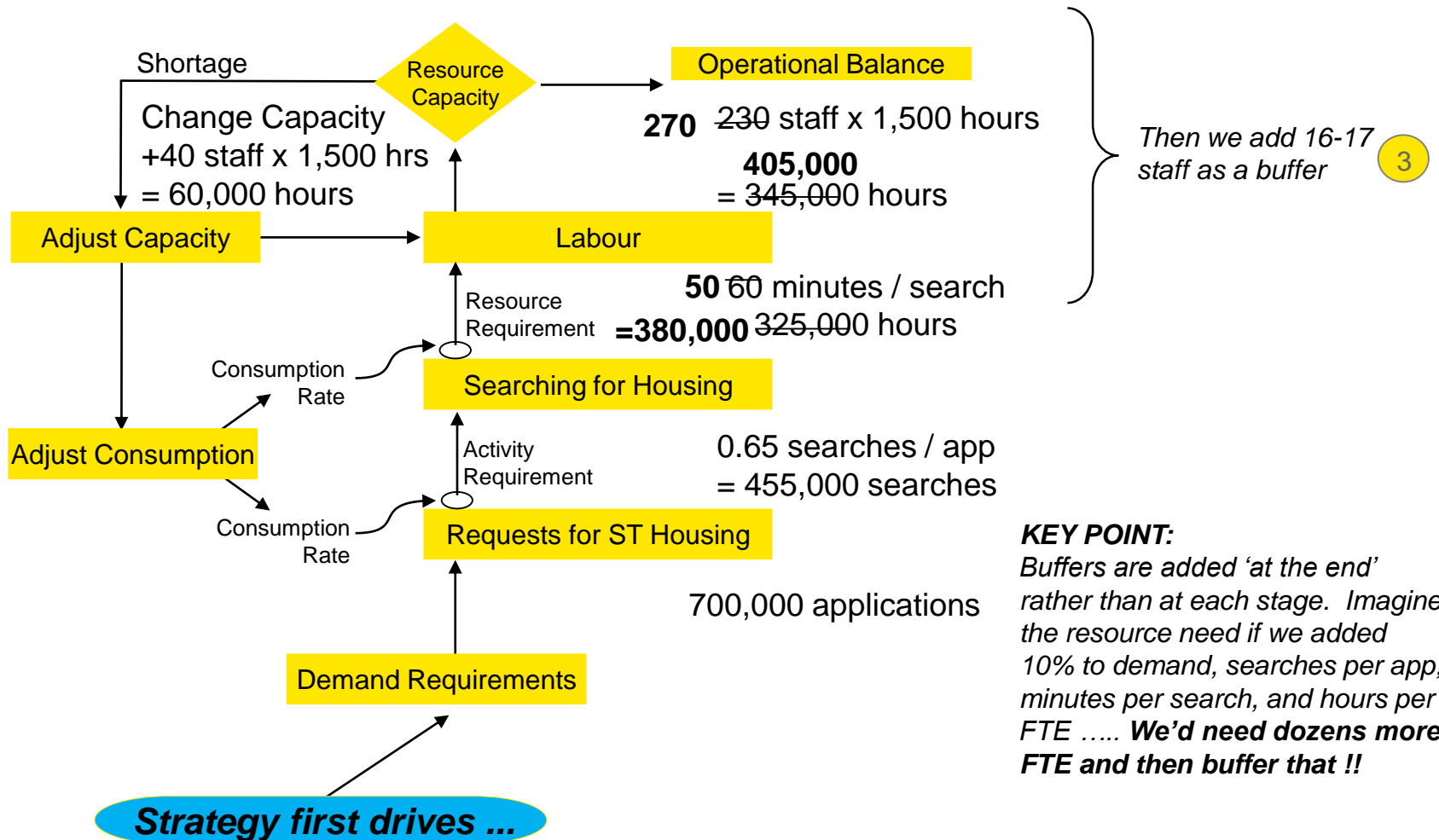
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If we start with a 40% jump in demand to 700K apps, then holding all else constant we'll need about 480,000 hours of staff time (incl. buffer) ... but

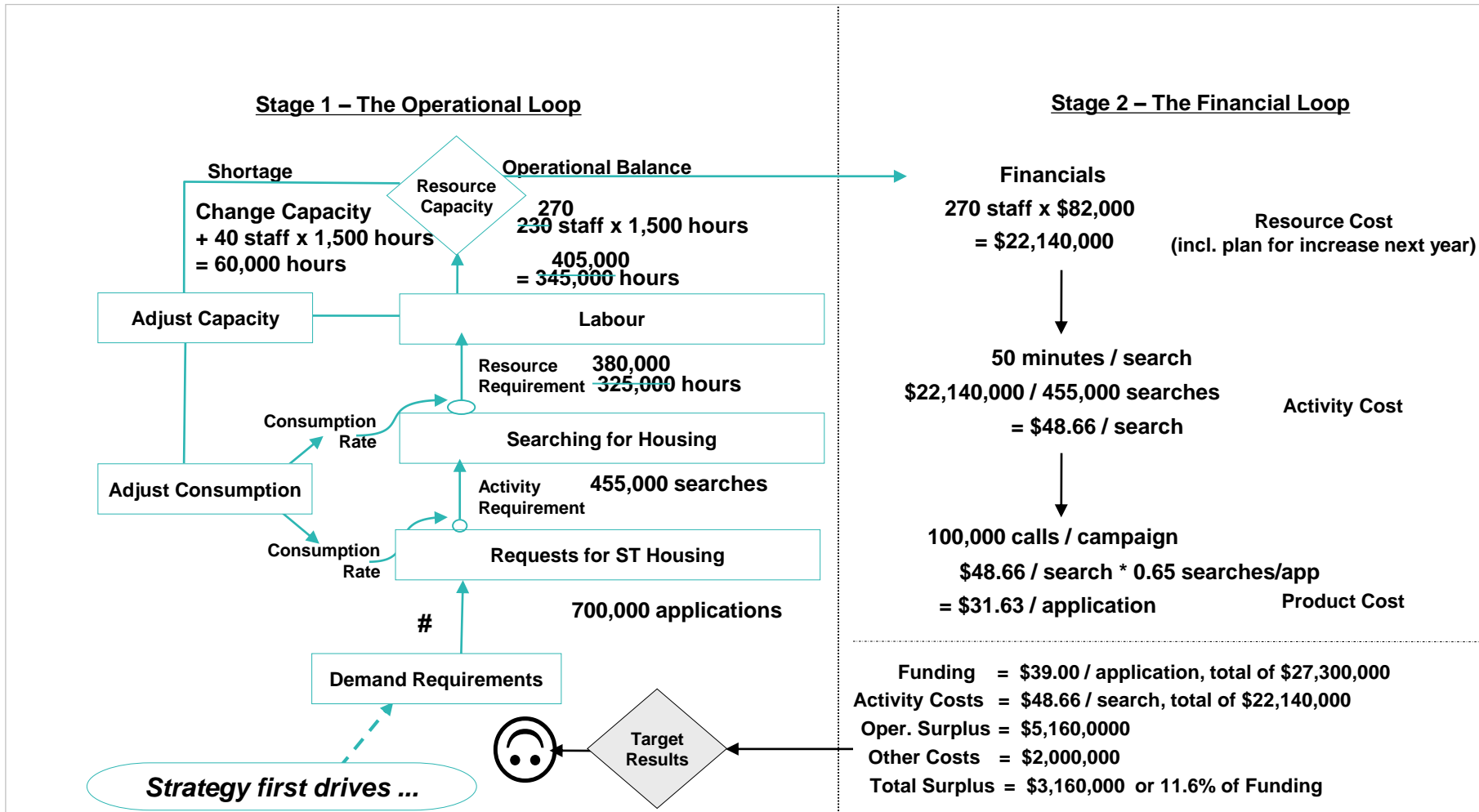
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Adding Buffer Capacity

Stage 1 – The Operational Loop

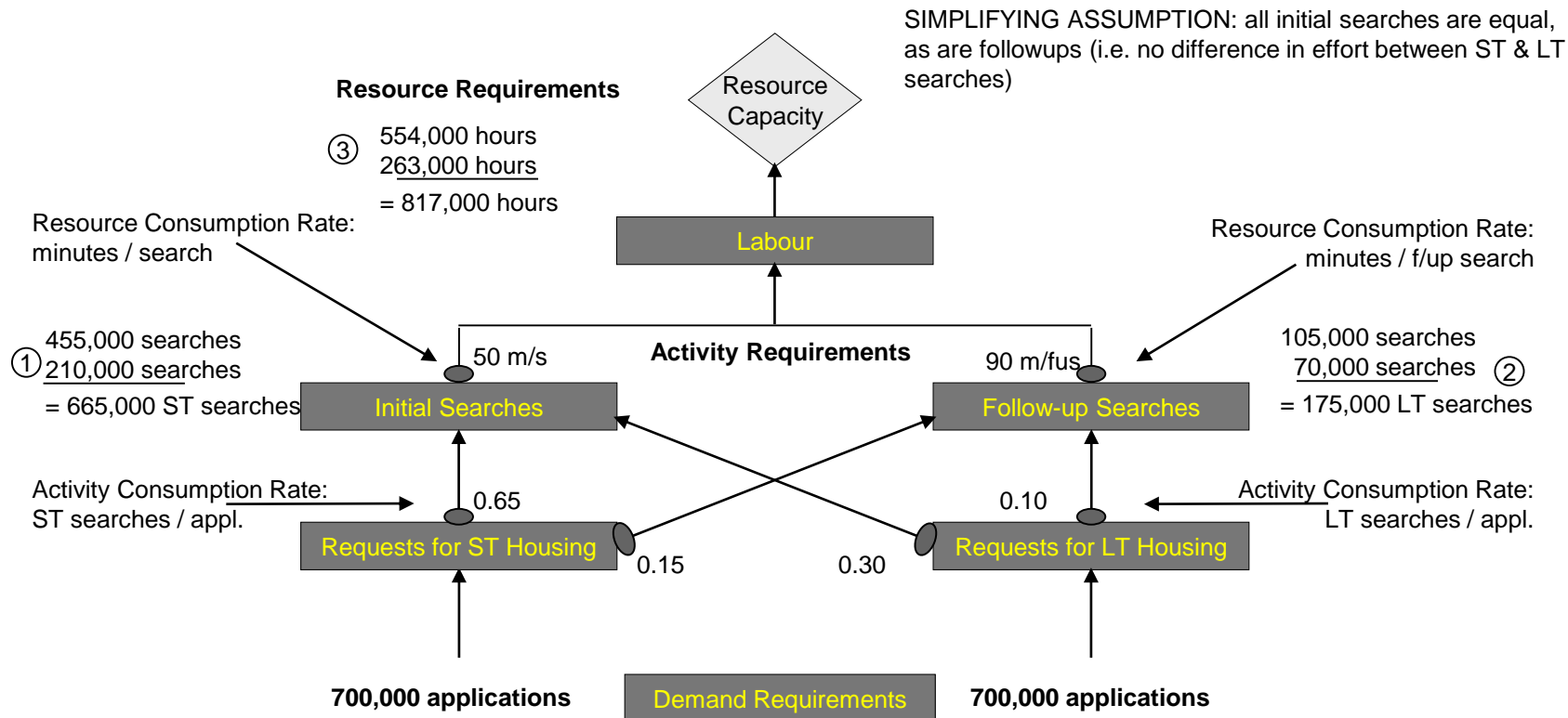


Operational and Financial Balance



Financial Loop Update – The improved consumption rate allows funding to be reduced to just about \$35 / application !

More Realistic: Two Activities & Services



① 700,000 applications @ 0.65 ST searches/application plus 0.30 searches for longer term accommodation/resettlement

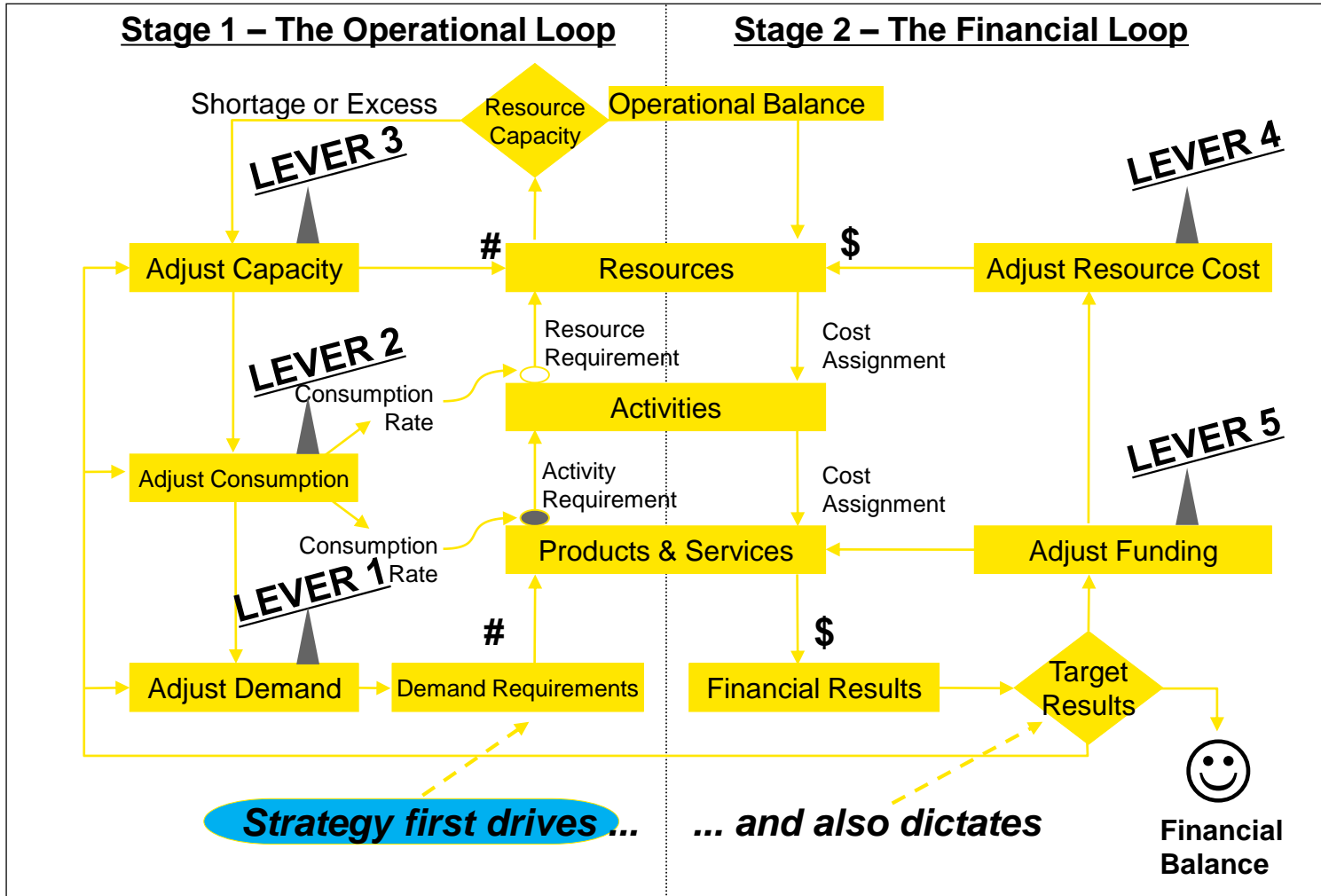
② 700,000 applications @ 0.15 FOLLOWUP ST searches/application plus 0.10 FOLLOWUP searches for longer term accommodation/resettlement.

③ 665,000 initial ST searches at 50 minutes/search \div 60 minutes per hour = 554,000 hours.
175,000 follow-up searches at 90 minutes per search \div 60 minutes per hour = 263,000 hours.

Where Traditional Approaches Go Wrong

- ▶ As underlying or external demand changes, that knowledge is not cascaded to lower-level units
- ▶ Consider the immigration center:
 - ▶ Does HR know that 30 or 40 staff need to be hired?
 - ▶ Is IT aware of the new telephony needs?
 - ▶ Is the training group ready to handle the growth?
 - ▶ Is there office space for 30 or 40 more people?
- ▶ Without this 'cascading' significant operational and financial problems may arise

The 5 Levers of Budgeting



Case Overview & Instructions

- NISP:
 - New immigration program and the CFO has asked for your help to prepare a budget
 - Case highlights

- Now:
 - Read case study document & review excel exhibits
 - Think about two topics: building a budget/forecast and then factoring in options

- Before & After lunch:
 - Work in table groups
 - Respond to each of the questions in the case
 - Groups can present solutions then full room discussion

NISP Planning Request #1

- ***METRICS: What are the top 3 metrics to project client & service level demands?***
- Exhibit 3 listed 8 metrics (top 3 bolded):
 - **General Inflation**
 - Consumer Purchasing
 - Nominal GDP Growth
 - Real GDP Growth
 - Housing Cost Growth
 - Unemployment Rate
 - **Global Migration Growth**
 - **CDN Attractiveness Rank**
- Picking 3 requires that we know the intended use of each metric

NISP Planning Request #2

- ***VOLUMES: Projecting client and service level volumes***
- See Solutions Exhibit #1

NISP Planning Request #3

- ***COST TYPES: How does each admin cost type relate to service volume?***
- Exhibit 2 shows the 8 cost types (comments bolded):
 - Fin'l Acctg & Reporting: **Fixed**
 - Risk & Compliance: **Fixed**
 - FP&A - Short & Long Term Accommod'n: **Step**
 - FP&A - Lang/Cult: **Step**
 - FP&A - Employment: **Step**
 - FP&A – General: **Step**
 - HR – Office: **Step**
 - HR - Client Service: **Step**
- Fixed – does not change with volume 'over the relevant range'
- Linear – changes with each discrete volume increment/decrement
- Step – changes with volume but not by individual unit

NISP Planning Request #4

- ***VOLUMES: Projecting work effort & head count***
- See Solutions Exhibit #2

NISP Options Analysis

1. ***CHANGES IN VOLUME: How can NISP adjust its plans if one type of application grows much faster than planned?***
2. ***SHIFTS IN VOLUME: How can NISP adjust its plans if one type of application grows much faster than planned while others grow much more slowly?***
3. ***GEO-POLITICS: How can NISP flex its plans to accommodate global trends?***
4. ***ROLLOVER OF PLANS: How does NISP ensure that prior agency plans roll over to NISP?***

SUGGESTION – Lets have each table discuss one of the 4 questions for 10 minutes, then pick one table per topic to present its ideas.

NISP Options Analysis, discussion #1

1. ***CHANGES IN VOLUME: How can NISP adjust its plans if one type of application grows much faster than planned?***
 - ***Assessment of cost types and trends is key: which costs change on linear vs. step bases, or are fixed?***
 - ***Is funding tied to volume or must NISP constrain its services or operate differently?***
 - ***Can components of its budget be shifted to other areas?***

NISP Options Analysis, discussion #2

2. ***SHIFTS IN VOLUME: How can NISP adjust its plans if one type of application grows much faster than planned while others grow much more slowly?***
- ***Usually a much simpler situation to face***
 - ***Can components of its budget be shifted to other areas?***
 - ***But need to assess resource skills to ensure services are delivered by appropriate personnel.***

NISP Options Analysis, discussion #3

3. ***GEO-POLITICS: How can NISP flex its plans to accommodate global trends?***
- ***Reflect back on Shell Oil – does NISP require ‘scenario planning’ resources to pro-actively ‘look outside’ and ‘look [far enough] ahead’ to see potential changes in trends***
 - ***Is funding tied to volume or must NISP constrain its services or operate differently?***

NISP Options Analysis, discussion #4

4. *ROLLOVER OF PLANS: How does NISP ensure that prior agency plans roll over to NISP?*

- ***This is a topic for YOU, the experts in the room!***

Initial Questions for our CFO

1. As a CFO how do you assess the completeness & reasonableness of a forecast/plan submission?
2. Can you describe 3 essential skills that a Financial Advisor and a CFO must have to perform their role?
3. How do you see the role of a Financial Advisor?
4. In your opinion, how a Financial Advisor can contribute to better manage the forecasting process and reduce the financial risks?
5. As a CFO, What do you expect from financial advisors to help you to manage the initial budget allocations and initial financial pressures?