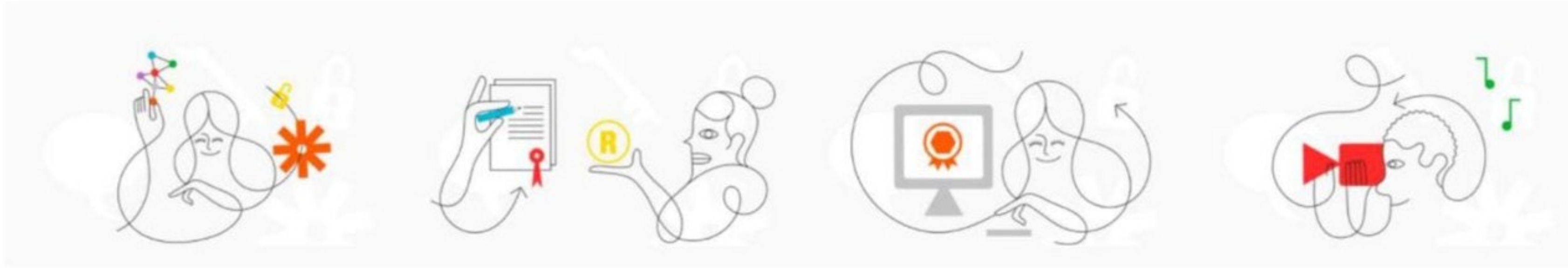# eHIPOC

## Virtual Meeting with IP offices in South Asia, Southeast Asia, Iran and Mongolia

**Thank you for joining us.  The meeting will start shortly.**

- **Please ensure that microphones are <u>muted</u>**

- **You can log into www.menti.com using the following code : 1704 3861**

# Online Forum Sessions
## How to access Menti.com

**Step 1:** In the internet browser of your <u>mobile phone</u> or computer open this webpage:
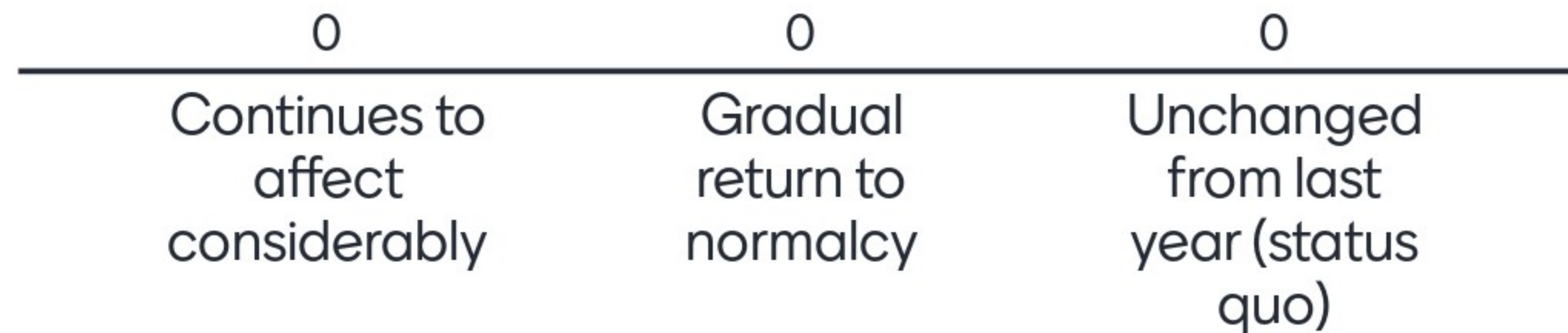
# www.menti.com

**Step 2:** Enter the 6 digit code 17043861 (and that appears at the top of the presentation)

**Step 3:** Press **Submit**

### (On phone screen)

🔒 menti.com

**Mentimeter**

Please enter the code

1704 3861

Submit

The code is found on the screen in front of you

# How is COVID-19 currently affecting your office?

| 0 | 0 | 0 |
|---|---|---|
| Continues to affect considerably | Gradual return to normalcy | Unchanged from last year (status quo) |

# What are your expectations of today's master class on financial management of IP offices?

WIPO
WORLD
INTELLECTUAL PROPERTY
ORGANIZATION

- 🔵 To get a better understanding of current developments/challenges in this area
- 🟡 To exchange views, experiences, practices
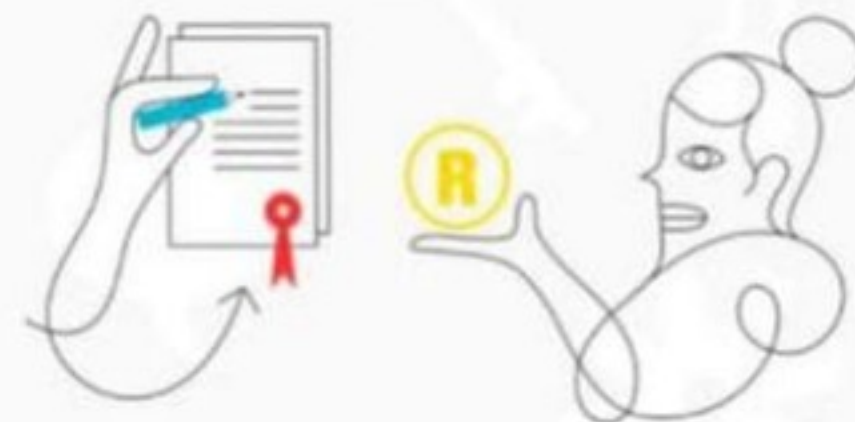- 🟢 To explore possible collaboration with WIPO in this area

# eHIPOC

Virtual Meeting with IP offices in South Asia, Southeast Asia, Iran and Mongolia

**Thank you for joining us. The meeting will start shortly.**

- Please ensure that microphones are <u>muted</u>

- You can log into www.menti.com using the following code : **1704 3861**

**Key Note Address on IP and Development under the Regional and National Development Sector**

Mr. Hasan Kleib
Deputy Director General
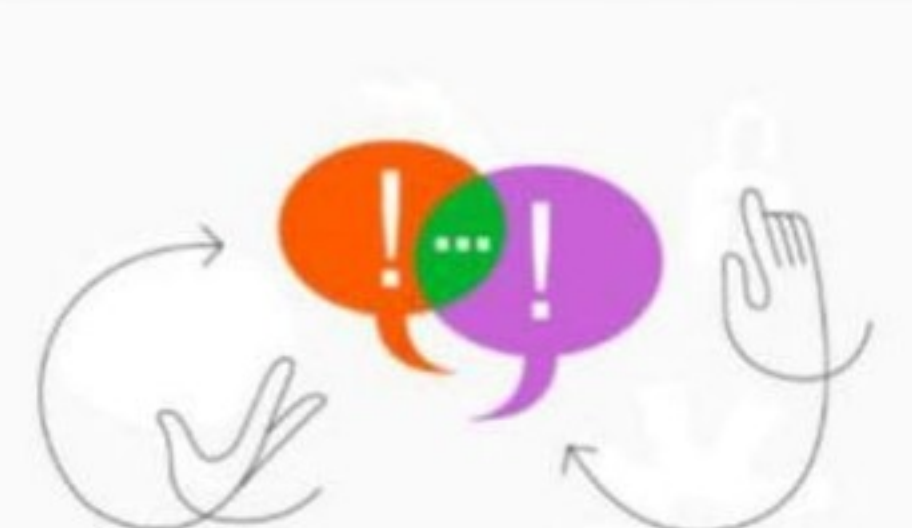Regional and National Development Sector, WIPO

# Segment 1

## IP Office Management Master Class 1:

**Financial Management of Intellectual Property Offices: *Key Challenges and Main Issues Related to Filing Projection and Financial Forecasting***

Presenter:    Mr. Ian Heath, IP Management Consultant, First Thoughts, O'Connor Australia

# Financial Management of IP Offices

## Key Elements of Financial Management

- The four fundamental elements of financial management are *budgeting*, *accounting*, *reporting*, and *internal controls*

- However, good financial management is not just about sound accounting practices

- Good financial management should include using financial information to plan and implement strategic improvements to the operations of an organisation

# Financial Management of IP Offices

## National Financial Management

- At a national level, good financial management usually puts particular emphasis on two of the four elements - budgeting and reporting

- Most modern governments use some form of program- or outcome-based budgeting and reporting

- These approaches are designed to ensure national resources are being allocated according to current priorities (not just allocations based on past history of allocations and expenditure)

*How should these approaches translate to the IP Office level?*

# Financial Management of IP Offices

Basic Elements of IP Office Financial Management

- The four fundamental elements of good financial management should be in place – budgeting, accounting, reporting, and internal controls

- Good financial planning and management at the IP Office level should also include two additional elements;
  - some form of activity- or product-based costing to provide detailed information about the costs of operations in the IP Office
  - Development and use of appropriate modelling to predict future workloads to provide essential information to support predictions about future financial needs and necessary allocations

*What are the basic benefits of these additional elements of good financial management?*

# Financial Management of IP Offices

Activity- or Product-Based Costing in IP Offices

- Full costs of carrying out the receiving, processing and examination of each type of IP right should be clearly understood. Full costs for each type of IP right should include:
  - Direct staff costs for processing the right
  - Indirect overhead staff costs related to the right (HR, Finance, etc)
  - General administration costs directly related to the right (consumables, equipment, etc)
  - Costs associated with accommodation and related costs

- The key benefit of this level of understanding is to provide the ability to develop clear and comprehensive analysis of the costs and benefits of any proposals to improve the efficiency of processing operations
  - Changes to processes (or regulations) should not be made without understanding the full cost implications

# Financial Management of IP Offices

## Forecasting Models for IP offices

- It is very important for IP Offices to develop models to predict future workloads

- Such models should be regularly used to plan future staffing requirements and other budgetary needs such as accommodation, equipment, etc

- The key benefit of sound predictive modelling is that it allows planning to proceed over longer timeframes than annual budget cycles
  - This is especially necessary for IP Offices to enable planning for the recruitment and training of staff to undertake future examination work

*What are the key challenges or impediments facing IP Offices to improve financial management?*

# Financial Management of IP Offices

Key Challenges for IP Offices to Improve Financial Management

- Based on recent projects in the Asia-Pacific region on Resource and Management Diagnostic of IP Offices, three challenges stand out

*Challenge 1: Limited financial control at the IP Office level*

- Finance areas are often in the main Ministry responsible for the IP Office
- Detailed central control over budgets, purchasing and expenditure
- Limited IP Office management involvement or autonomy in financial management of IP Office
- The consequences of this are:
  - Limited financial capability or responsibility within the IP Office
  - Limited access to necessary information to develop activity- or product-based costing models

# Financial Management of IP Offices

Key Challenges for IP Offices to Improve Financial Management (cont)

*Challenge 2: Restrictive government-wide staffing practices*

- Numbers of public sector staff and the level of various positions are often centrally controlled and restricted
  - Central recruitment is common
  - Arbitrary staff ceilings are often set
  - Excessive numbers of levels all linked to different pay grades
- The consequences of these central and inflexible controls are:
  - Poor budget allocation processes at a national level which undermines attempts to implement program- or outcome-based budgeting
  - Inability of the IP Office to adjust staffing levels and skills to match changing actual or predicted workloads
  - Lack of flexibility in staffing management within the IP Office

# Financial Management of IP Offices

Key Challenges for IP Offices to Improve Financial Management (cont)

*Challenge 3: Limited capability within IP Offices to develop workload prediction models*

- Future workload prediction is often limited to simple projections based on past year's filing
  - Lack of good data collection on local processing activities
  - Lack of good data on local and international trends in filing and innovation
- Limited commitment to improving workload prediction because of the limitations imposed by the first two challenges

# Financial Management of IP Offices

Conclusion

- The presentations and discussions in today's Master Class sessions will explore these issues further

- Speakers will provide information and suggest tools which IP Offices can use to overcome some of these challenges and achieve improved financial management outcomes

## Segment 2

## Different Approaches and Tools for Filing Projection, Expenditure/Revenue Forecasting and Modelling, Activity-Based Costing, Cost Recovery and Fee Setting: Best Practices and Experiences

Presenters:  **Ms. Adeline Chang**, Director of Finance, Intellectual Property Office of Singapore

**Mr. Kieran Sloan**, Deputy Chief Financial Officer and Assistant General Manager, IP Australia

**Mr. Pedro Barradas**, Financial Controller, European Union Intellectual Property Office

**Mr. Hao Zhou**, Director of Statistics, Statistics and Data Analytics Division, Department for Economics and Data Analytics, IP and Innovation Ecosystems Sector, WIPO

# Scope

- Background

- Cost Recovery

- Filing Projection & Revenue Forecast

- Fee Setting

- Best Practices & Experiences

# Background

Ideas Today. Assets Tomorrow.
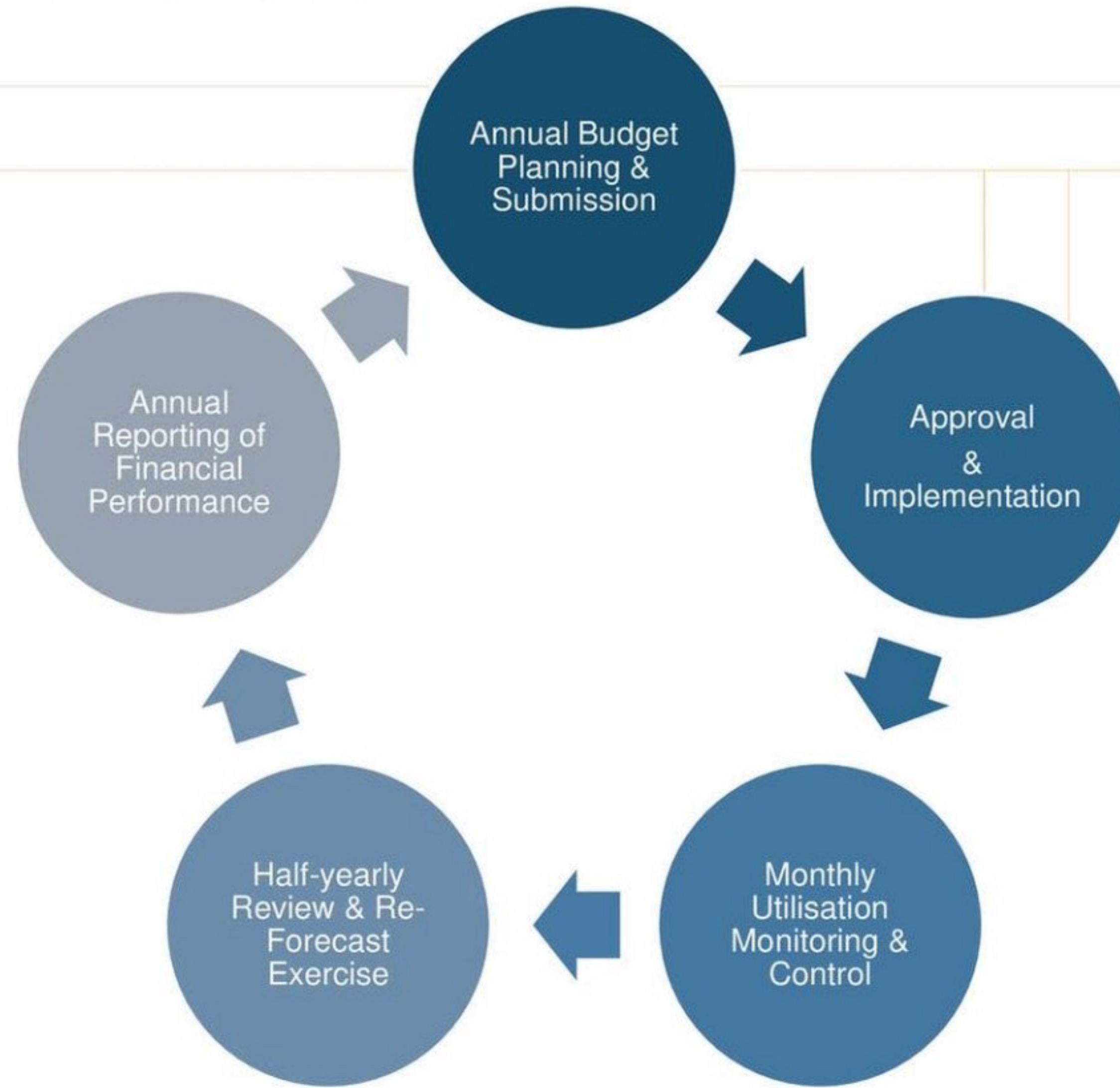
# Strong financial management system key to financial sustainab

IPOS is self-financing, it needs to operate within its revenue and ensure good surplus to prepare and invest for the future...



**Maintain Baseline Surplus**
- Creates buffer to absorb economic impact

**Baseline Operations**
- IP registries' operations and engagement activities

**Capital Development**
- Organisation transformation

Revenue          Expenditure

■ Registries Revenue ■ Govt Grant ■ Baseline Ops ■ Capital Devt

Ideas Today. Assets Tomorrow.

3
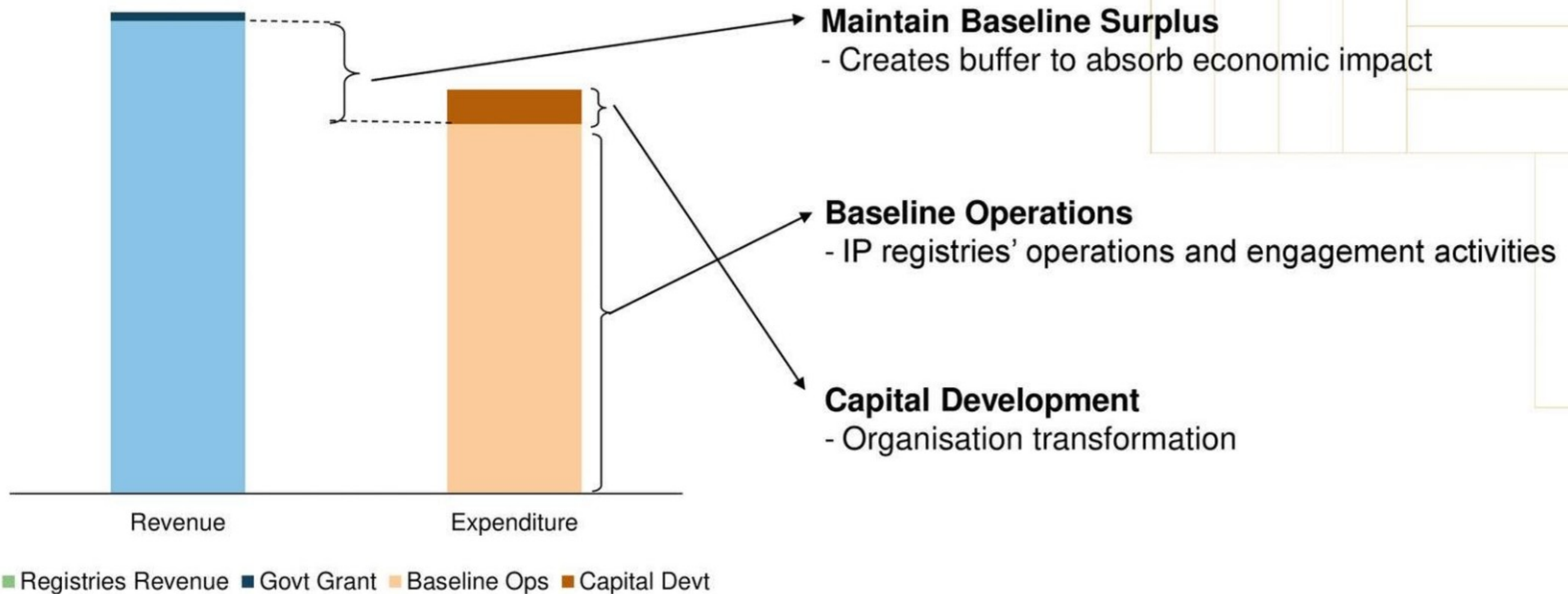
# Budgeting Cycle & Process



Annual Budget Planning & Submission

Approval & Implementation

Monthly Utilisation Monitoring & Control

Half-yearly Review & Re-Forecast Exercise

Annual Reporting of Financial Performance

Budget forms the basis for cost setting and fee recovery

# Cost Recovery

# Activity-Based Costing to track costs and improve efficiency



Compute $/min for each staff grade → Input time required for each activity by each staff grade → Derive manpower costs → Impute absorption rate for operating and overheads → Assign operating and overhead costs → Derive total costs of activity
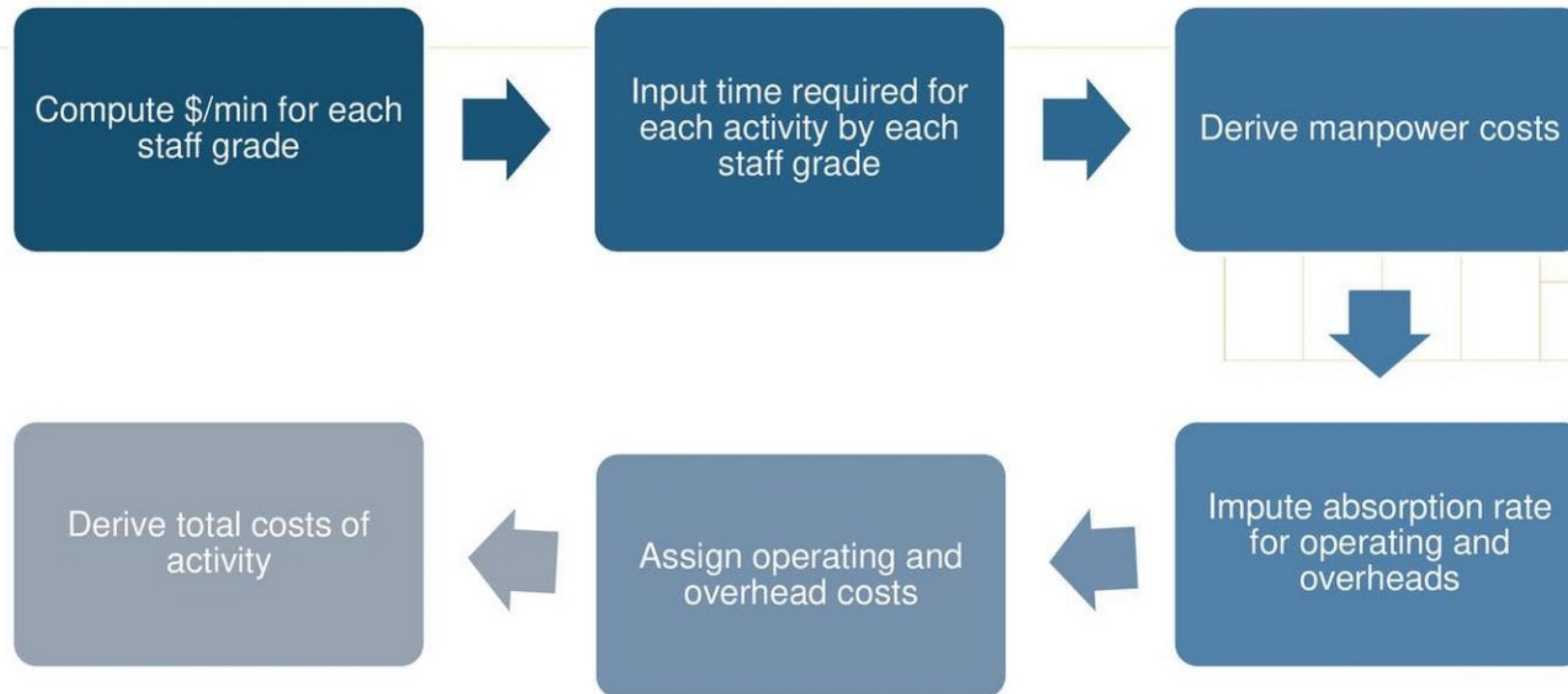
Accurately account for costs at a product/service level and give information for improving efficiency of processes
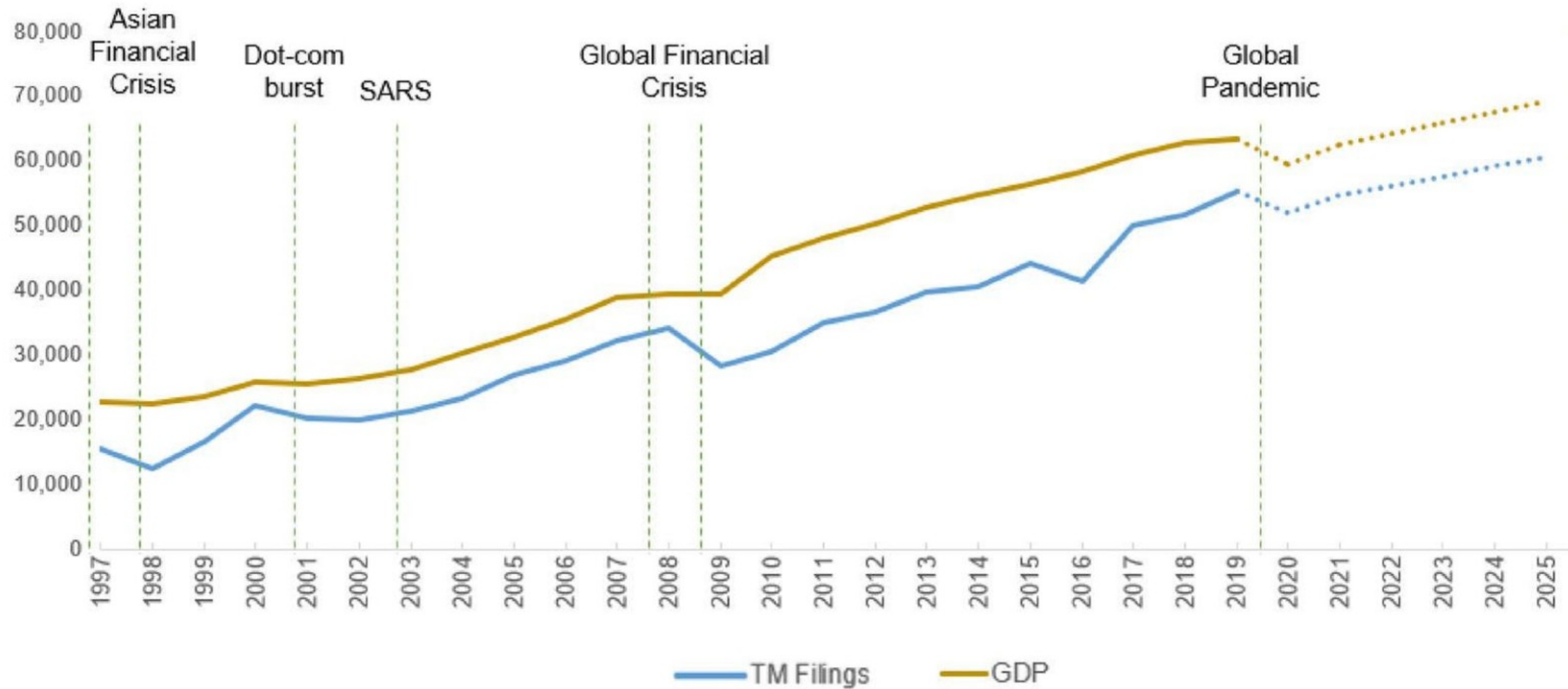
Ideas Today. Assets Tomorrow.

# Filing Projection & Revenue Forecast

# Filing Projection & Forecasting (Patents)
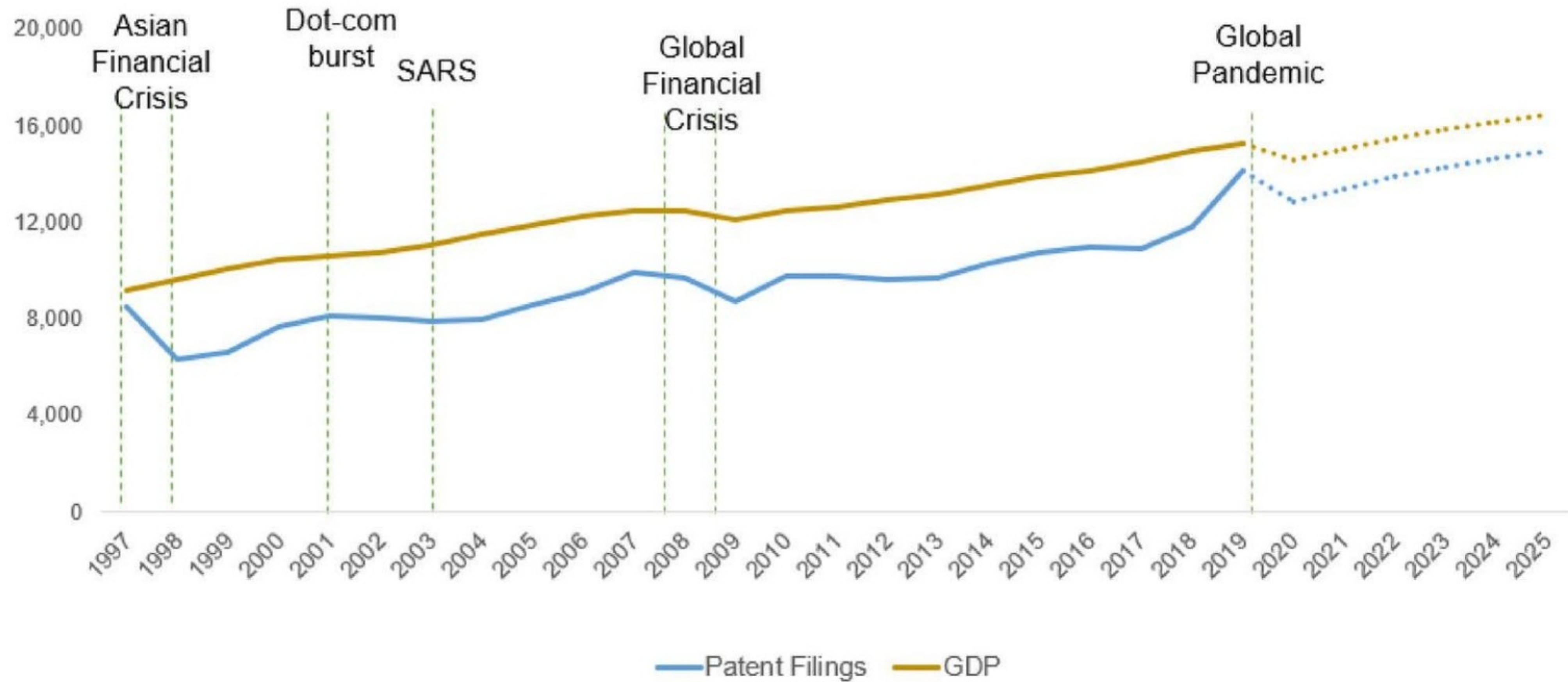
# Filing Projection & Forecasting (Trademarks)

# Fee Setting

# Fee Setting – Principles

**Cost Recovery**
- ✓ Consider how the ACRRs of fees compare to the TCRRs

**Policy Imperatives**
- ✓ Fees may be set above or below full cost of provision or the market rate if there are valid policy reasons

**Market Competitiveness**
- ✓ Fees to reflect cost efficiency and productivity gains

Ideas Today. Assets Tomorrow.

# Best Practices & Experiences

Ideas Today. Assets Tomorrow.

# Best Practices

Evaluate service delivery process to streamline process and reduce cost

Regular review of fees and analysis of filing projections

Assess implications and manage public reaction to fee changes

Ideas Today. Assets Tomorrow.

# Challenges

Enable financial sustainability of the IP office

Manage the impact of fee increases

Balance adoption of technological advances with re-skilling/re-deployment of manpower

# Opportunities

| Positioning for growth after recovery | • Machine-assisted capabilities in sense and decision-making |

| Maintaining investments in future IT architecture | • Next-Generation National IP Registration System |

Ideas Today. Assets Tomorrow.

THANK YOU

ADELINE CHANG
Director Finance, IPOS
Adeline_Chang@ipos.gov.sg

# Segment 2 cont..

## Different Approaches and Tools for Filing Projection, Expenditure/Revenue Forecasting and Modelling, Activity-Based Costing, Cost Recovery and Fee Setting: Best Practices and Experiences

**Presenter: Mr. Kieran Sloan**, Deputy Chief Financial Officer and Assistant General Manager, IP Australia

# IP Australia

eHIPOC – Wednesday April 28, 2021

Australian Government

IP Australia

WIPO
WORLD
INTELLECTUAL PROPERTY
ORGANIZATION

**IP Australia** is the Australian Government entity responsible for administering intellectual property (IP) rights and legislation relating to patents, trade marks, designs and plant breeder's rights.

IP Australia performs 3 main functions on behalf of the Australian Government:

- IP Rights Administration and Professional Registration

- Awareness and Education

- Advice to Government and International Engagement

**IP Australia is over 99% cost recovered, through fees charged across the following five activities:**

- Patents

- Plant Breeder's Rights

- Trade Marks

- Designs

- Trans-Tasman IP Attorney System
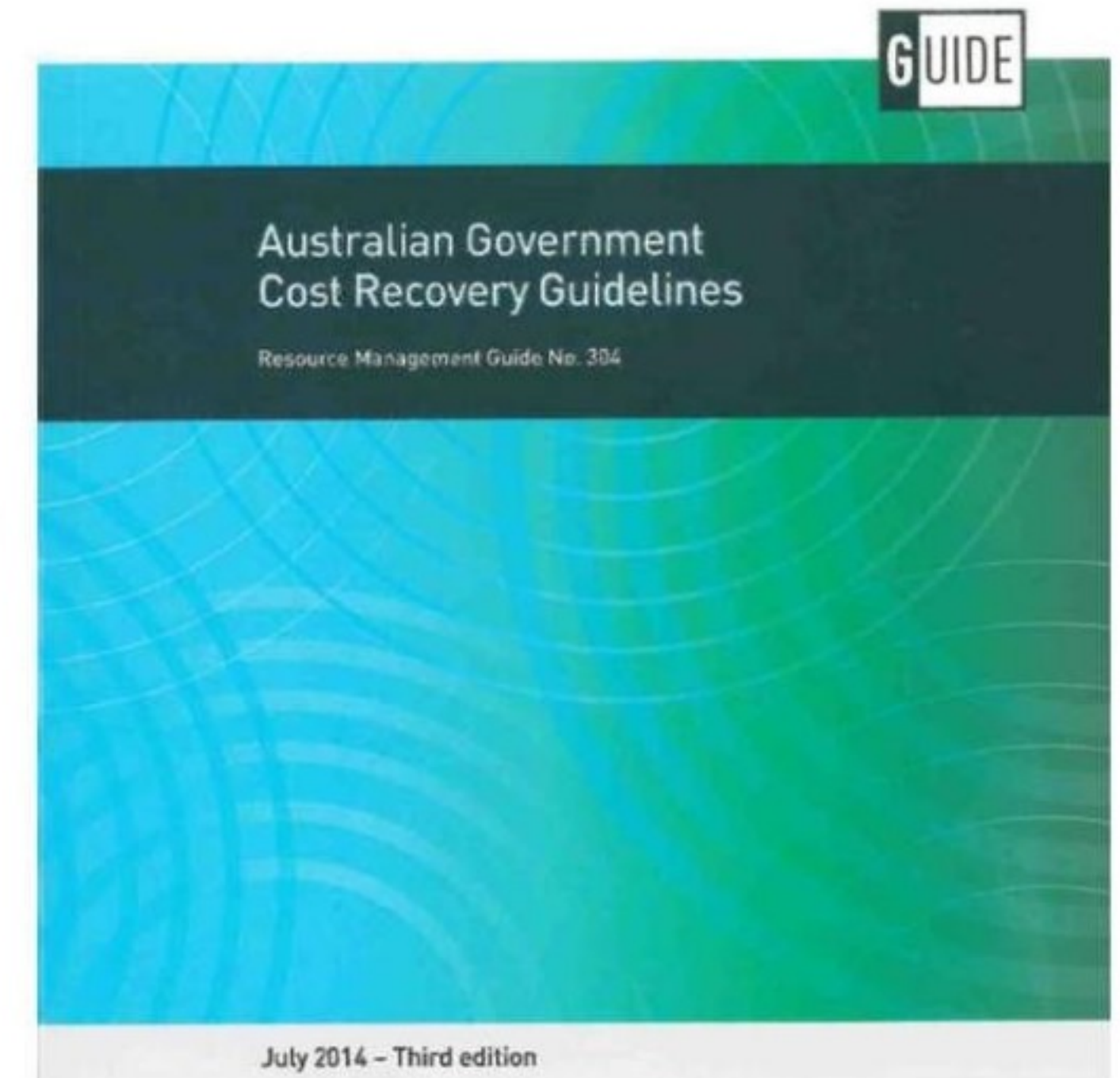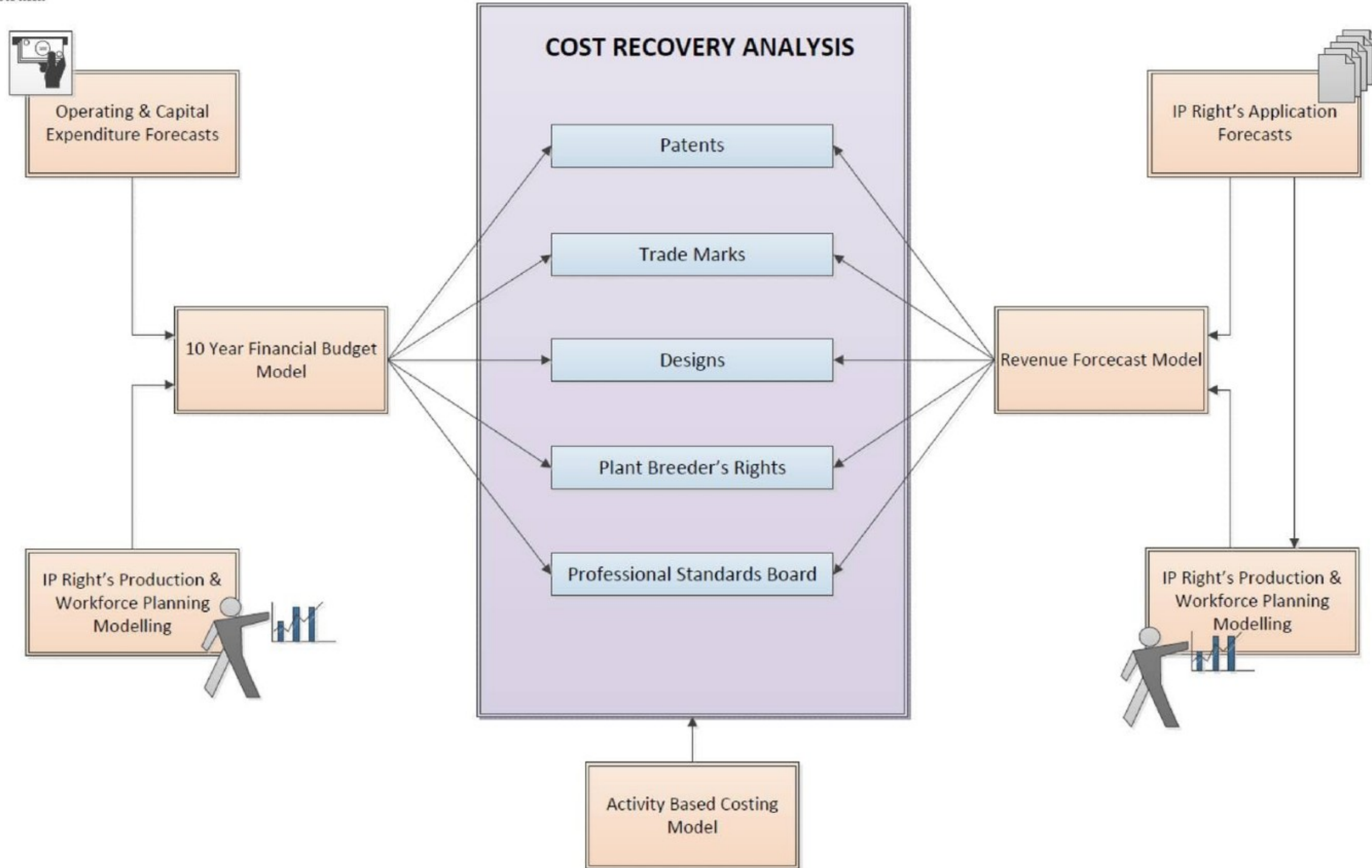
# Filing & Demand Forecasting

## Time Series Analysis – based on historic monthly demand filings

- Linear Regression
- Exponential Smoothing
- Auto Regressive Moving Average

## Comparative Analysis – based on historic monthly demand filings

- Year to date volume as percentage of full year; against 5 year average
- Compare year on year growth; short-term changes
- Compare WIPO filings to percentage entering national phase
- Compare country of origin growth trends

## Qualitative Analysis

- Information provided by the IP Rights Groups
- Potential change of legislation impacts
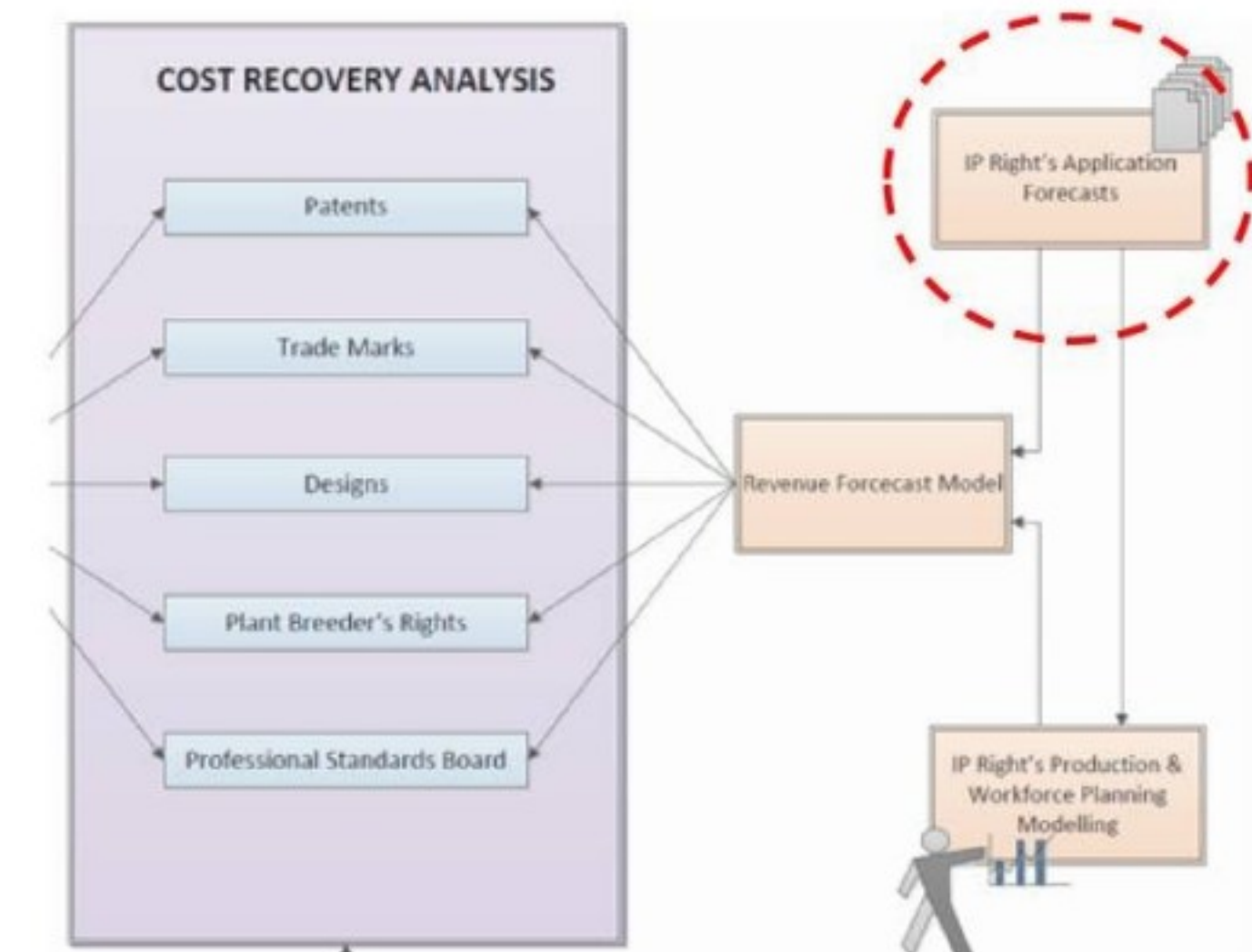
# Revenue Forecasting & Modelling

IP Australia's Revenue Forecast Model (RFM) helps monitor and forecast fee volumes and revenue projections over a 20-year horizon.

## Renewal Revenue Forecasting

- Patent renewal volumes are modelled based on long-term average drop-off rates. Of all standard applications filed approximately 36% drop-out before making a 4th year renewal with a further 9% dropping out each year after.
- Trade Mark renewal volumes are modelled for the first 3 renewal periods (30 years) with 70% of applications dropping out before 10 years, and an additional 9% dropping out for the 2nd and 3rd renewals.

## Other IP Rights Revenue Forecasting

- Revenue derived from examination is based on exam volumes provided by our IP Rights production modelling.
- Acceptance and excess claims revenues are calculated based on historic rates of first reports that get accepted, and the historic number of excess claims per acceptance.
- Extensions of time, sale of documents, hearings and other smaller revenue items tend to hold relatively flat.
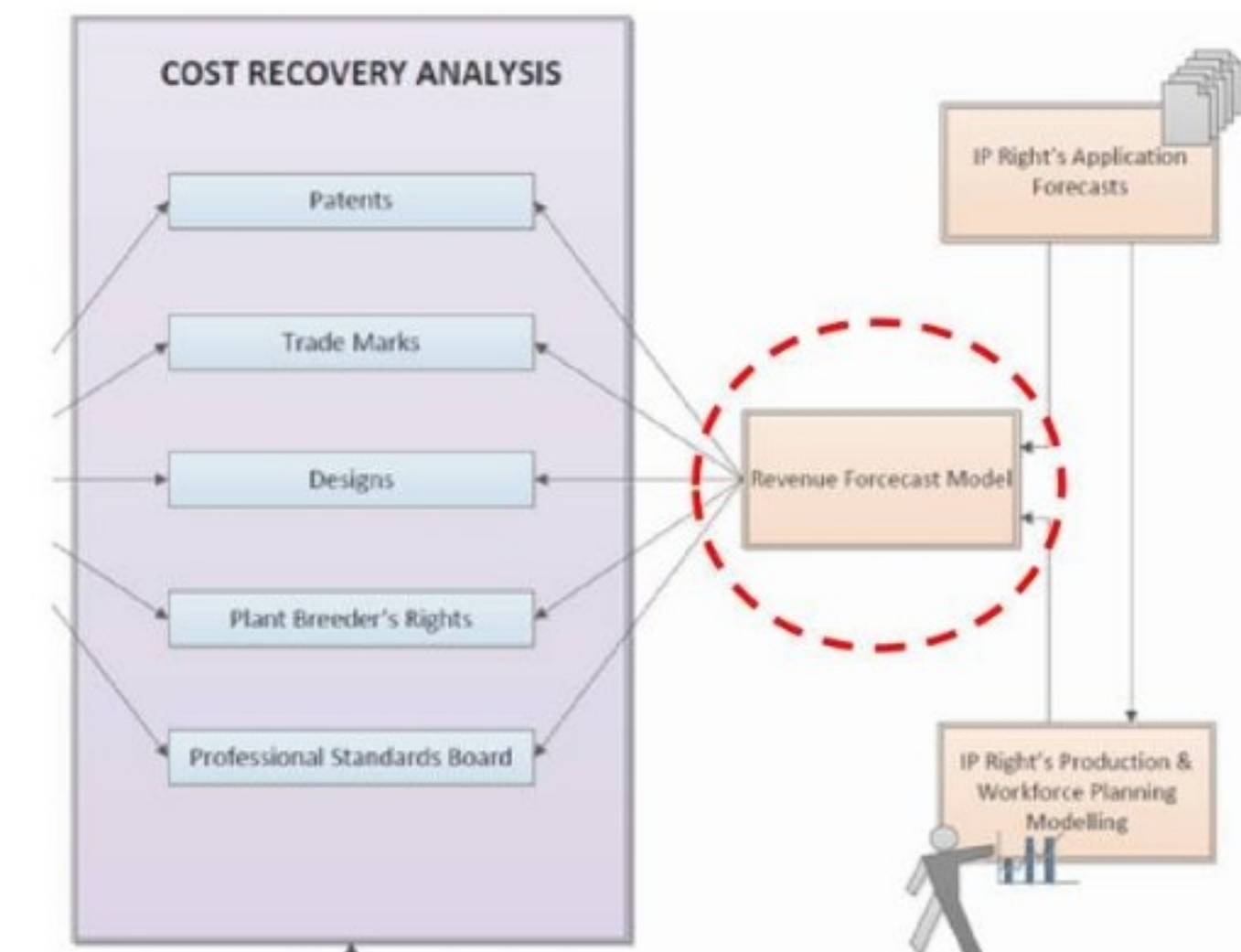
# IP Rights Production Modelling

The production models are used to manage the stockpiles of IP Rights, and identify the examination staff required to meet demand projections and the commitments as provided by IP Australia's customer service charter.

### Inputs

- Demand forecasts
- Staff profile – how many examiners in each section

### Modelling Assumptions

- Attrition (separation) rates
- Estimated times to examine the various IP products
- Number of staff on temporary transfers and leave

### Outputs

- Number of examination staff required in IP Rights
- The timing and number of new examiner recruits
- Planned production outputs
- Overtime requirements
- Changes to stockpiles
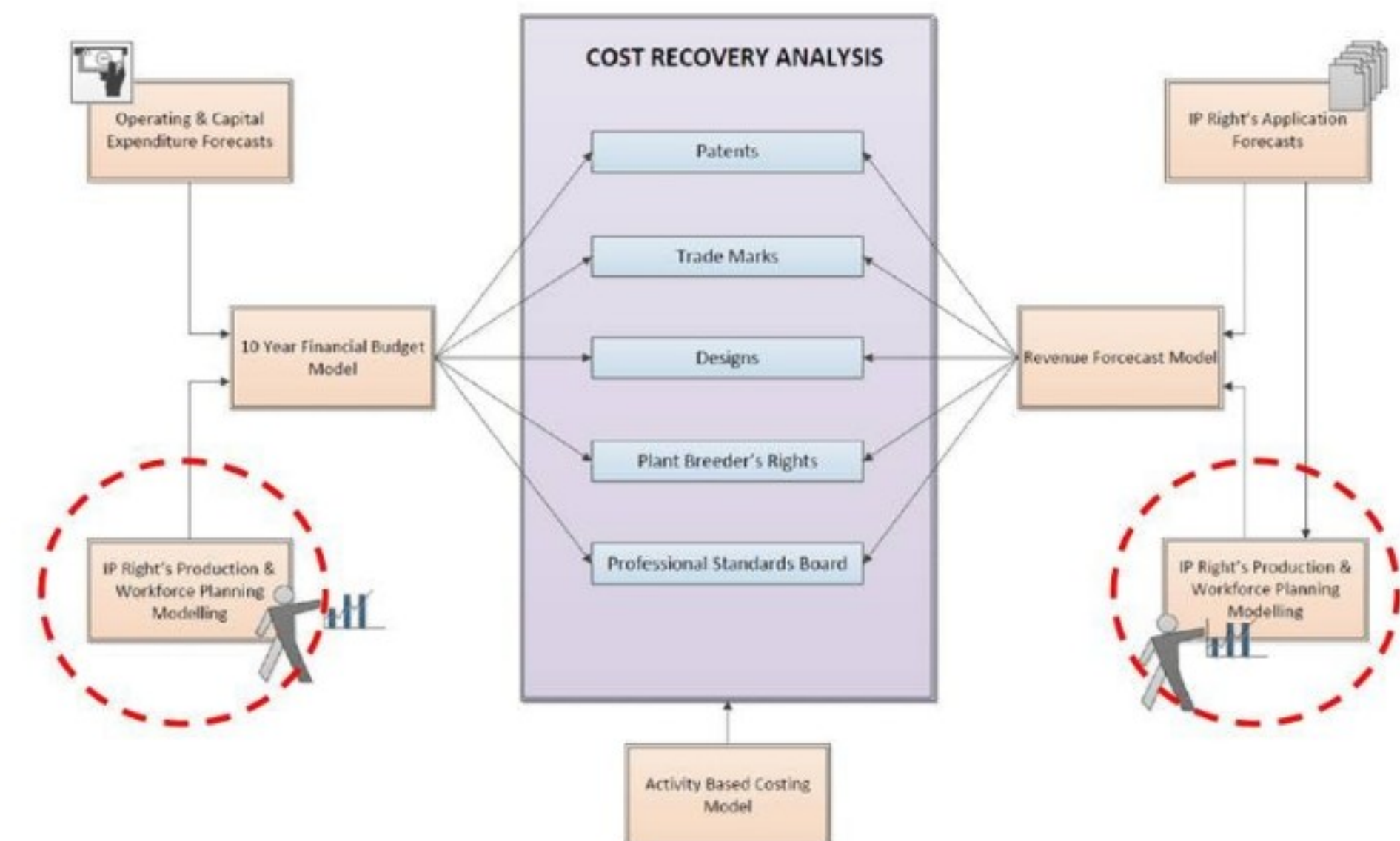
# Expenditure Forecasting & Modelling

IP Australia's 10-Year Budget Model identifies the total staffing and financial position of the organisation over a 10 year horizon.

- The model identifies and forecasts all operating and capital expenditure.

- Identifies changes to staffing levels and budgets for each section of the business.

- Takes into account CPI growth rates, wage growth, and other known cost pressures.

- Captures benefits and savings from the release of new technologies and other identified efficiencies.

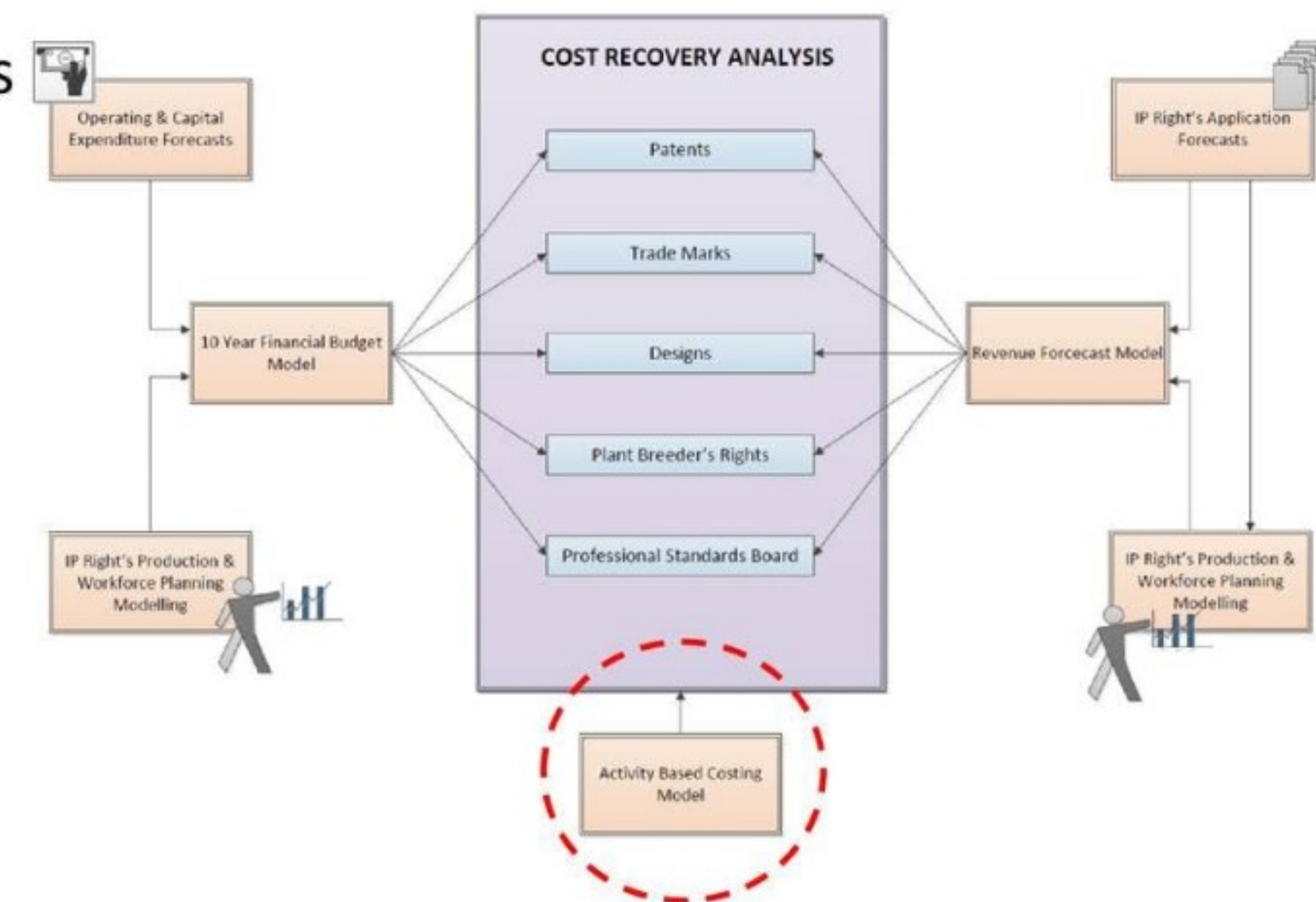- Forecasts the level of annual cash reserves.
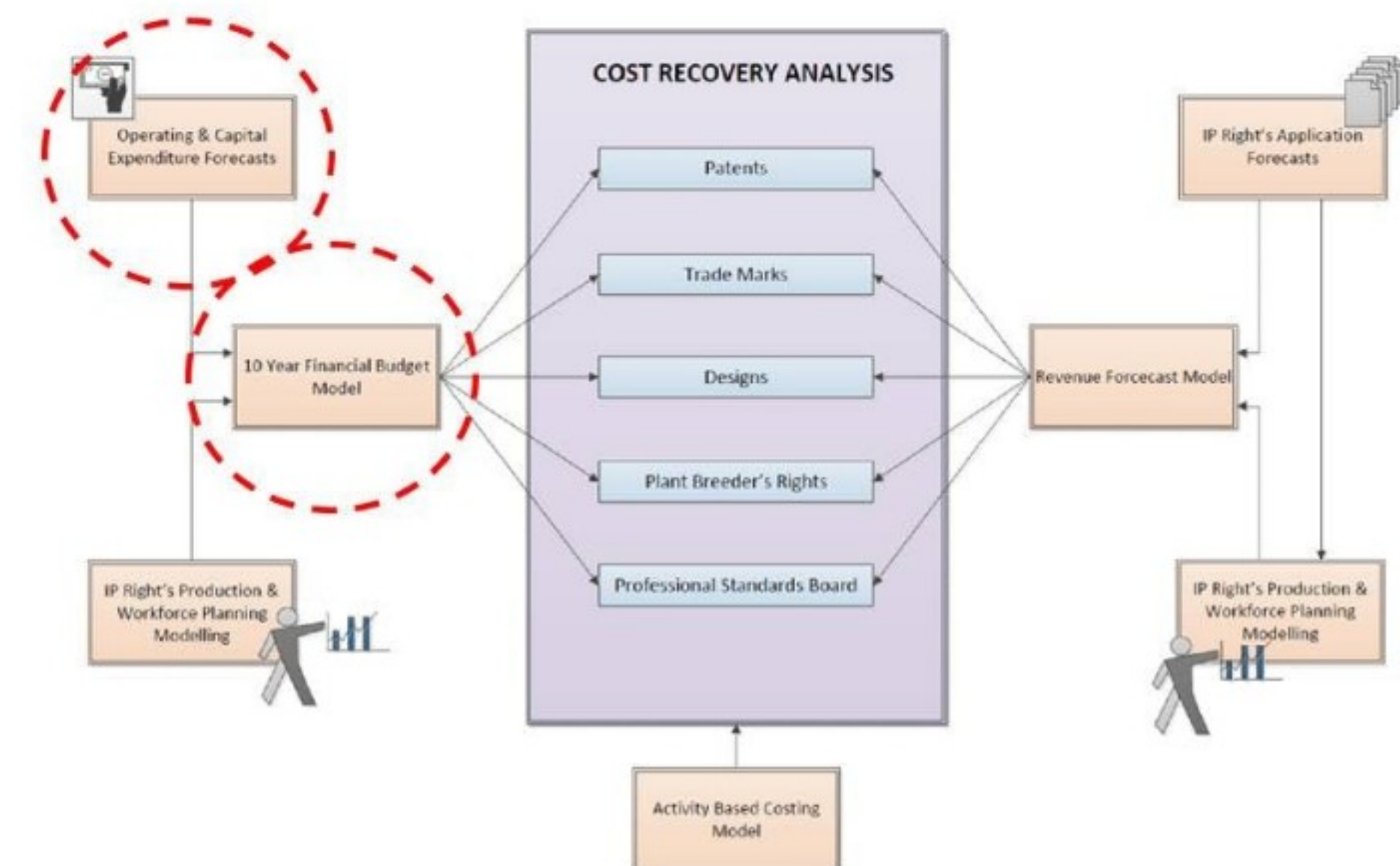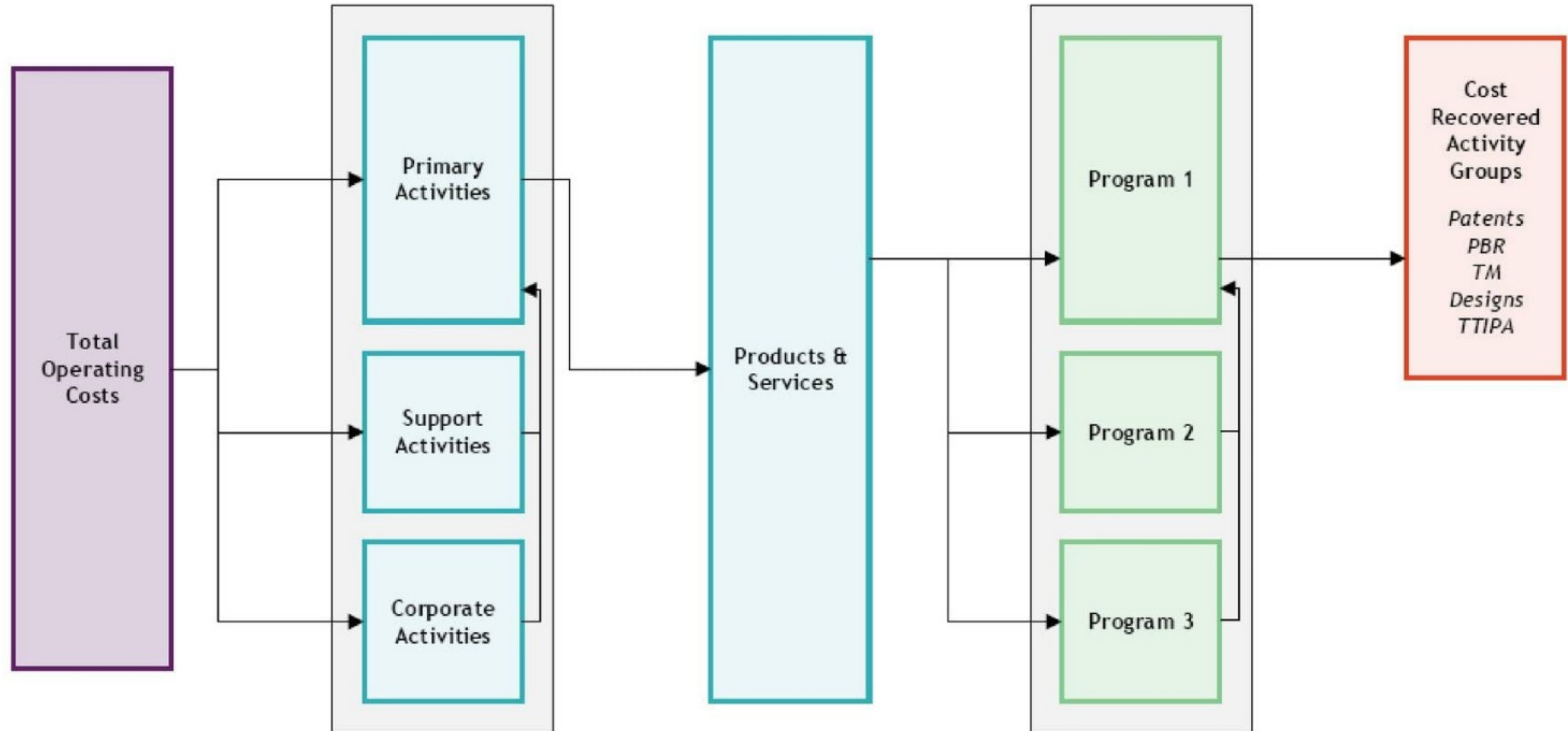
# Activity Based Costing (ABC)

IP Australia utilises SAP PCM costing software to support the organisations reporting and decision making.
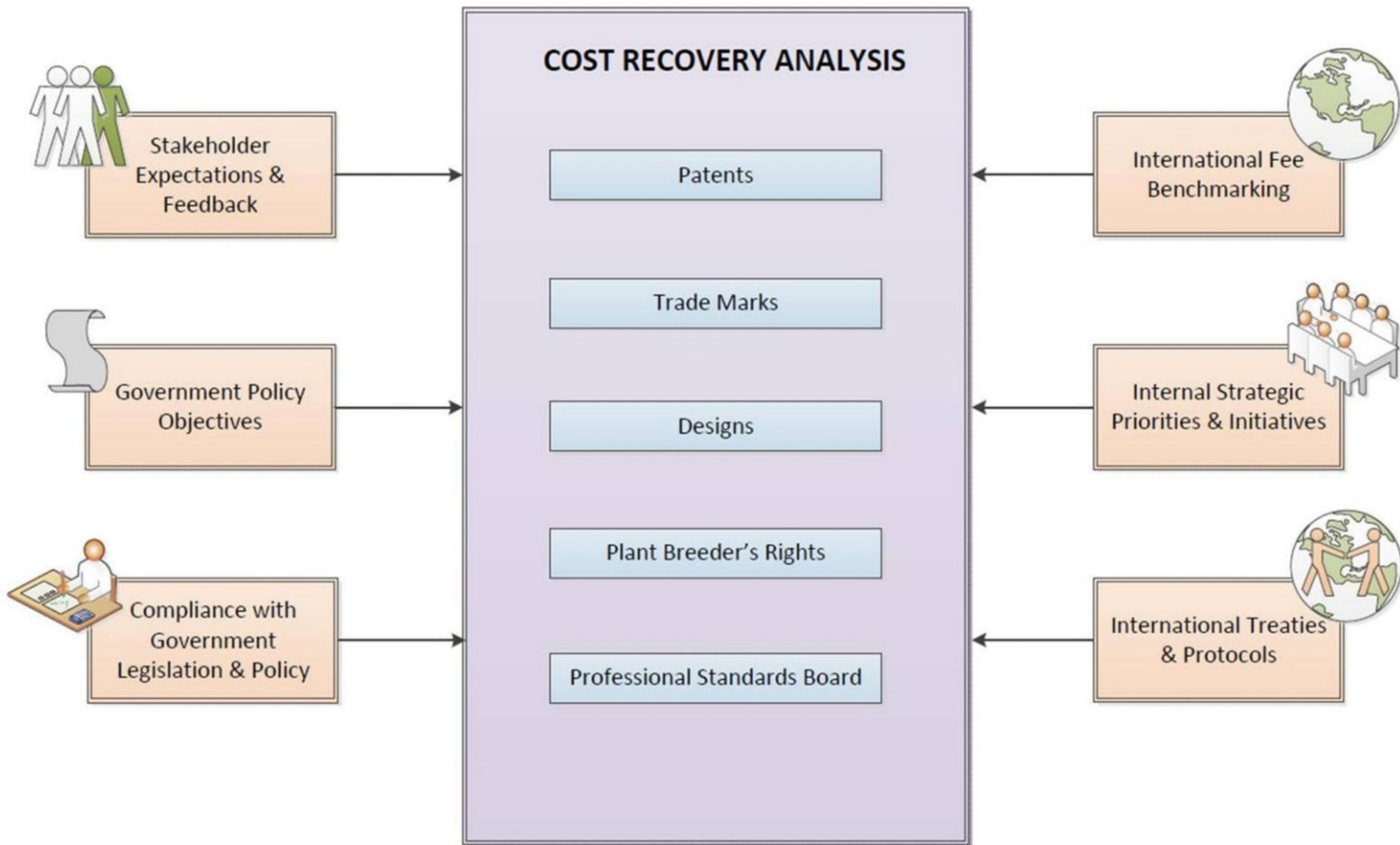
The ABC model helps to:

- Identify the cost of IP Australia's products and services

- Provide cost information for external reporting obligations

- Support fee reviews and explain changes to fees

- Provide information for internal costing exercises

- Support international benchmarking activities

# IP Australia - Activity Based Costing Model Diagram

**COST RECOVERY ANALYSIS**

Stakeholder Expectations & Feedback

Government Policy Objectives

Compliance with Government Legislation & Policy

Patents

Trade Marks

Designs

Plant Breeder's Rights

Professional Standards Board

International Fee Benchmarking

Internal Strategic Priorities & Initiatives

International Treaties & Protocols

# Model Development & Implementation – Lessons learned

1. Understand the purpose and reason for developing the model

2. Ensure management support

3. Clear communication

4. Access to reliable information and data sources

5. Identify and define the key elements and dimensions of the various models

6. Seek subject matter expertise

7. Ensure all business rules, procedures and assumptions within the models are well documented

8. Model inputs and outputs linked where possible

9. Allow sufficient time to design and build the model

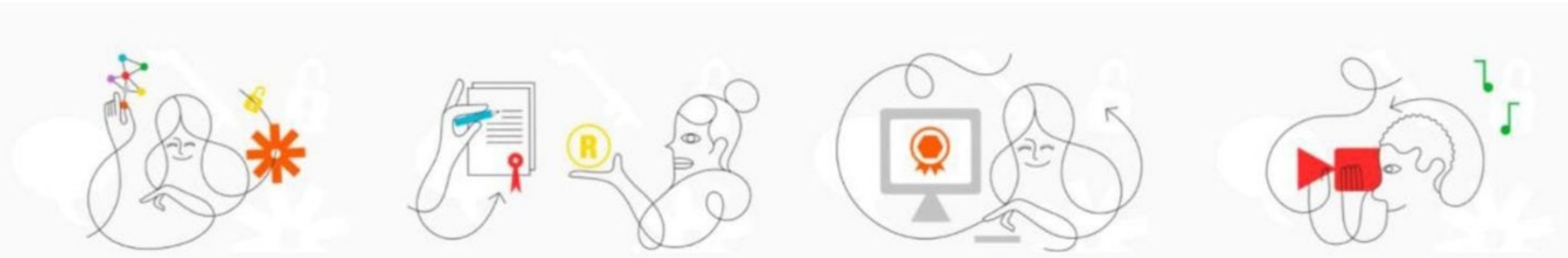10. Continual monitoring and review of models once implemented

**Mr. Kieran Sloan**

Deputy Chief Financial Officer and Assistant General Manager
Finance & People Services Group
IP Australia

Phone:  61 2 6283 2715 | Email: kieran.sloan@ipaustralia.gov.au

P — Patents
TM — Trade Marks
D — Designs
PBR — Plant Breeder's Rights

## Segment 2 cont..

### Different Approaches and Tools for Filing Projection, Expenditure/Revenue Forecasting and Modelling, Activity-Based Costing, Cost Recovery and Fee Setting:  Best Practices and Experiences

**Presenter:**  Mr. Pedro Barradas, Financial Controller, European Union Intellectual Property Office

## European Union Intellectual Property Office



Agency of the European Union responsible for:

- **Managing the EU trade mark** and the **registered Community design**,
- **European and international cooperation** in the field of intellectual property
- **European Observatory on Infringements of Intellectual Property Rights**."

Has legal, administrative, technical and financial autonomy, and is **entirely self-financed** through the fees charged for the services it provides.
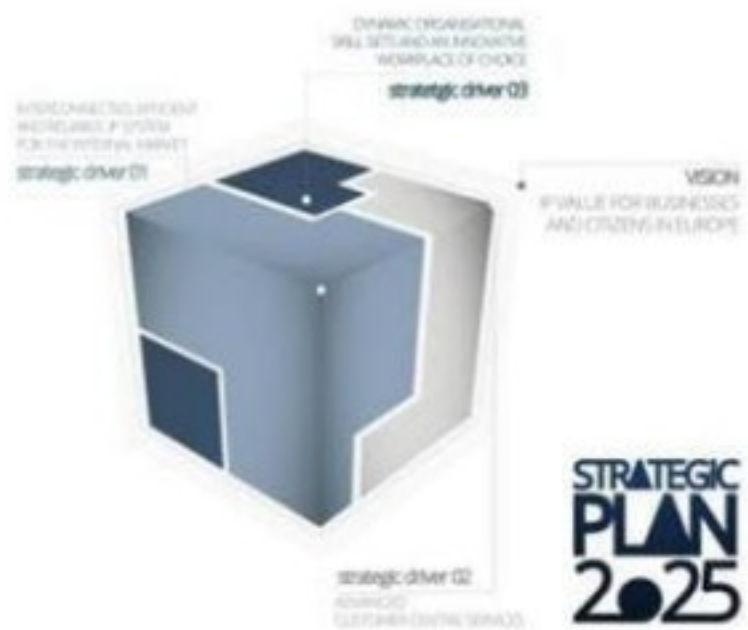
Governed by a Management Board and Budget committee

# MULTIANNUAL PROGRAMMING

## European Union Intellectual Property Office

In November 2019, the Office's Management Board approved the Strategic Plan 2025, built on a vision of delivering IP value for business and citizens in Europe.

"Core activities"

STRATEGIC PLAN 2025
European Union Intellectual Property Office

INTERCONNECTED, EFFICIENT AND RELIABLE IP SYSTEM FOR THE INTERNAL MARKET

GOAL 1.1
MATCHING TOOLS AND PRACTICES WITH USERS' NEEDS

GOAL 1.2
STEPPING UP IP ENFORCEMENT IN DEFENCE OF RIGHTS HOLDERS AND SOCIETY

GOAL 1.3
DEVELOPING AN IP KNOWLEDGE HUB

IPnetwork    IPexcellence    IPinnovation

DYNAMIC ORGANISATIONAL SKILL SETS AND AN INNOVATIVE WORKPLACE OF CHOICE

GOAL 3.1
CONTINUOUS LEARNING AND SUSTAINABLE STAFF ENGAGEMENT

GOAL 3.2
EVOLVING WITH THE DIGITAL ERA

GOAL 3.3
TOWARDS THE FUTURE SUSTAINABLE WORKPLACE

ADVANCED CUSTOMER-CENTRIC SERVICES

GOAL 2.1
IMPROVE USER EXPERIENCE, QUALITY AND EFFICIENCY

GOAL 2.2
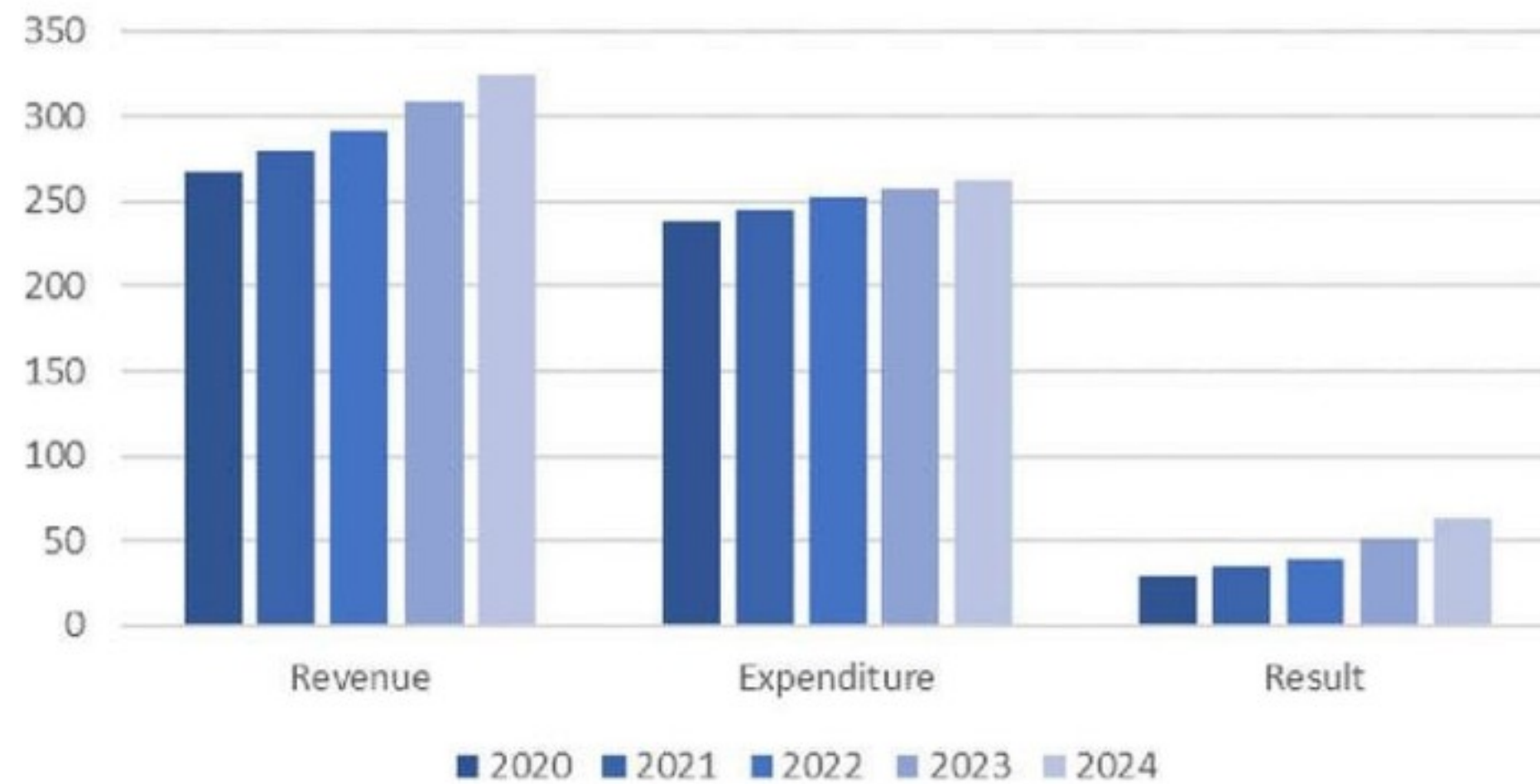NEW SERVICES TO INCREASE ADDED VALUE TO BUSINESSES

GOAL 2.3
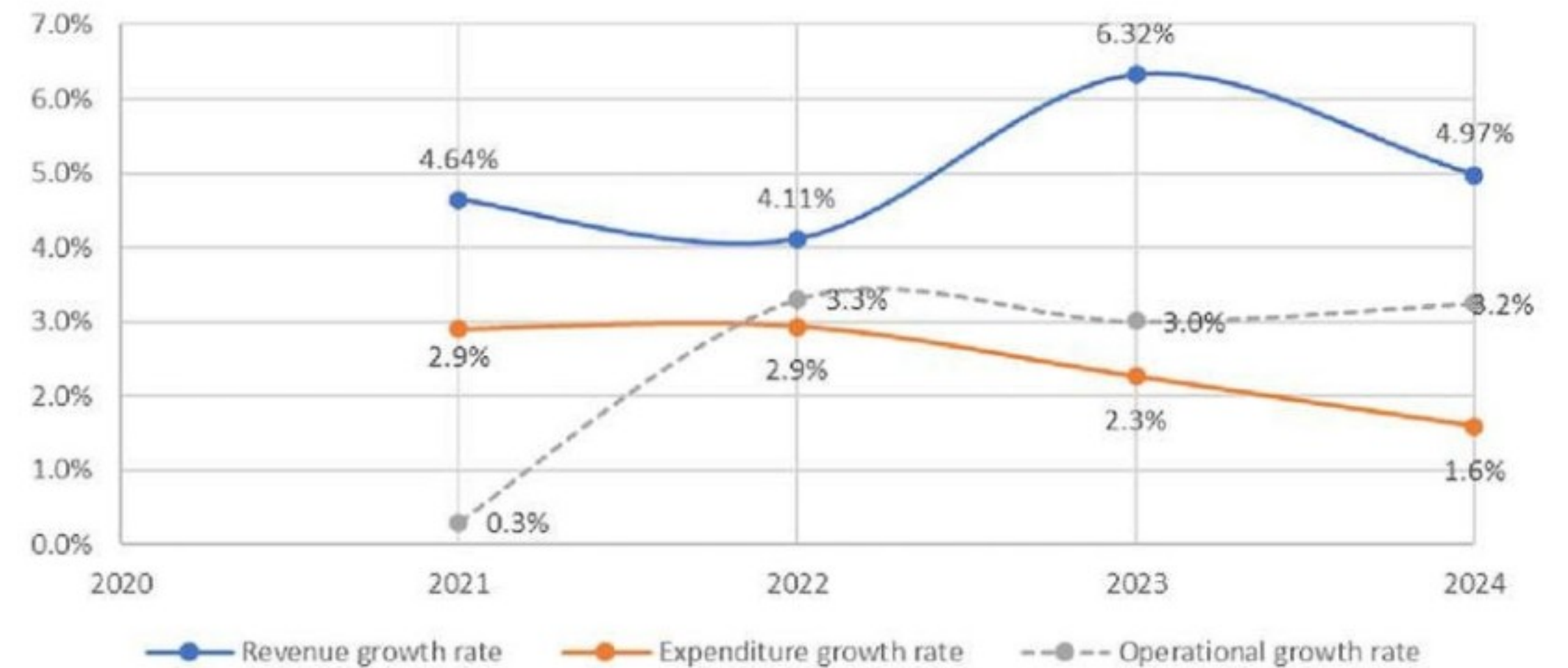IP SERVICES FOR SMEs

"Support activities"

"Core production"

## FORECASTING TOOLS

$$\left(1 - \sum_{i=1}^{p} \varphi_i L^i\right)(1-L)^d X_t = \delta + \left(1 + \sum_{i=1}^{q} \theta_i L^i\right)\varepsilon_t.$$

This defines an ARIMA(p,d,q) process with **drift** $\frac{\delta}{1 - \sum \varphi_i}$.
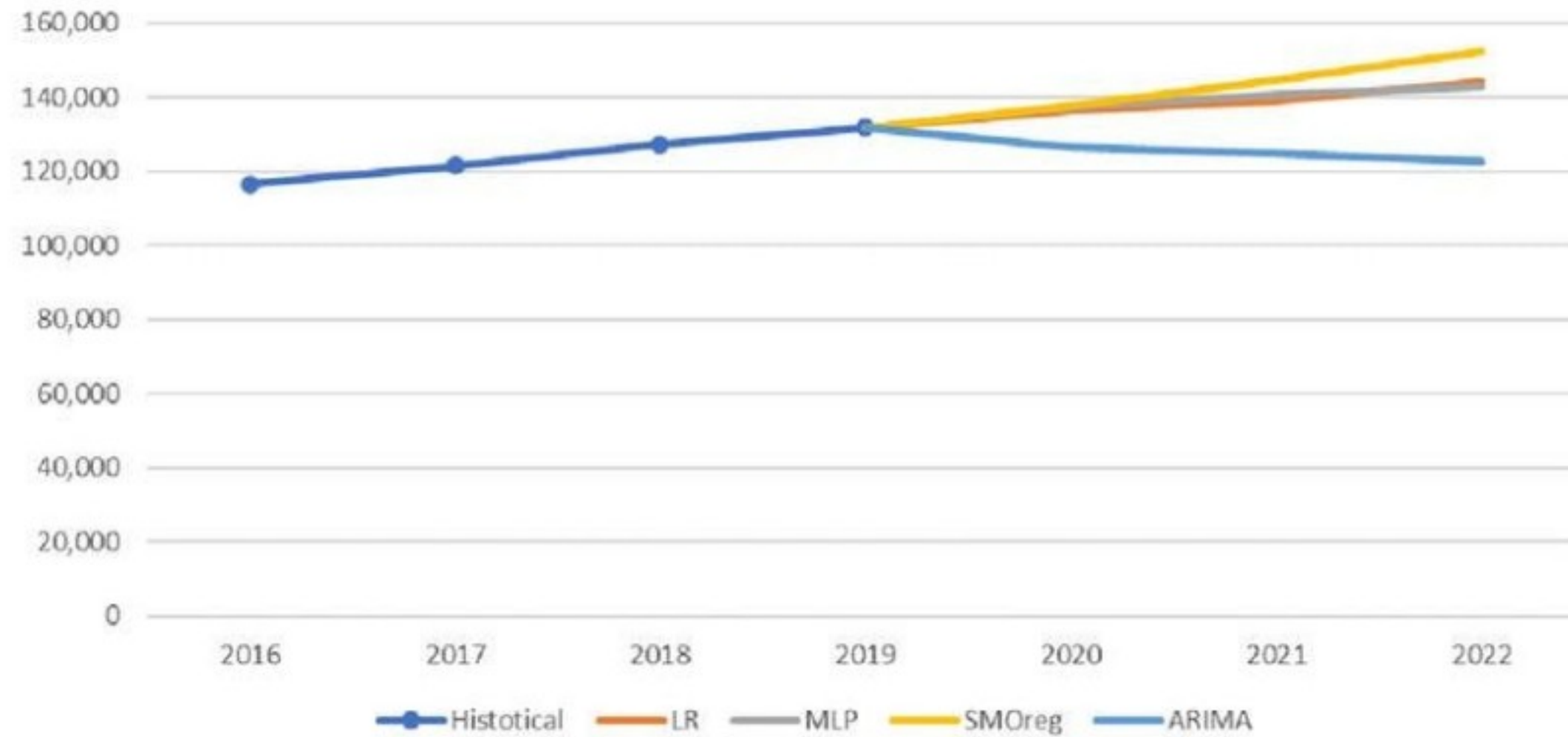
**ARIMA** - **A**uto**R**egressive **I**ntegrated **M**oving **A**verage
(Dummy variable: "Brexit")
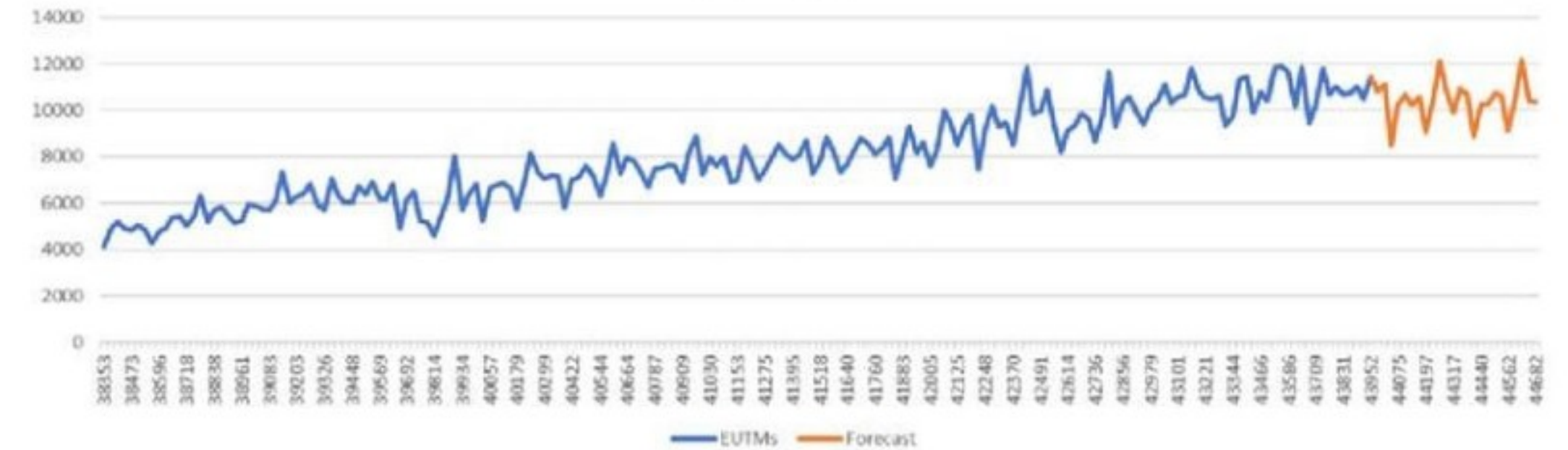
**Artificial intelligence forecasting algorithms,**
Support Vector Machine
  • Sequential minimal optimization regression (SMOReg)
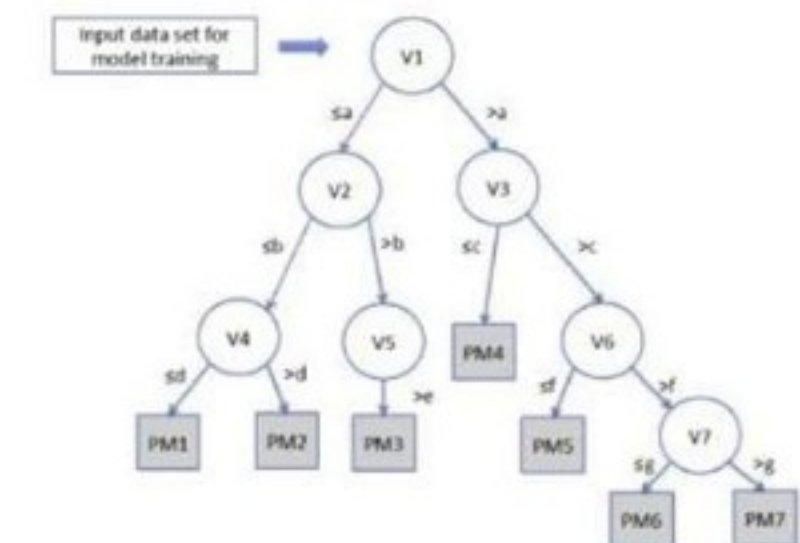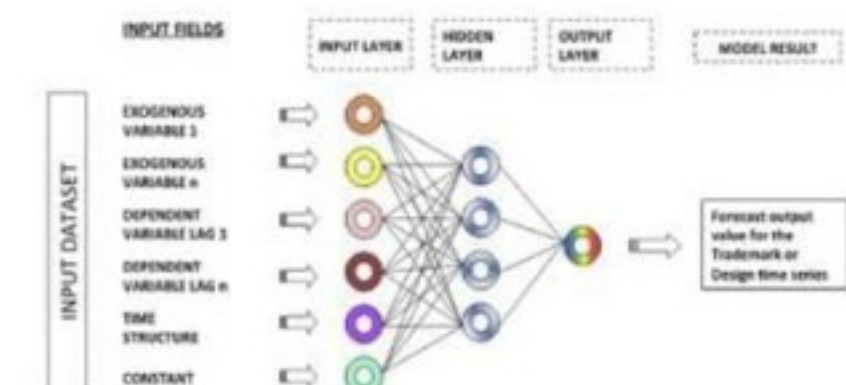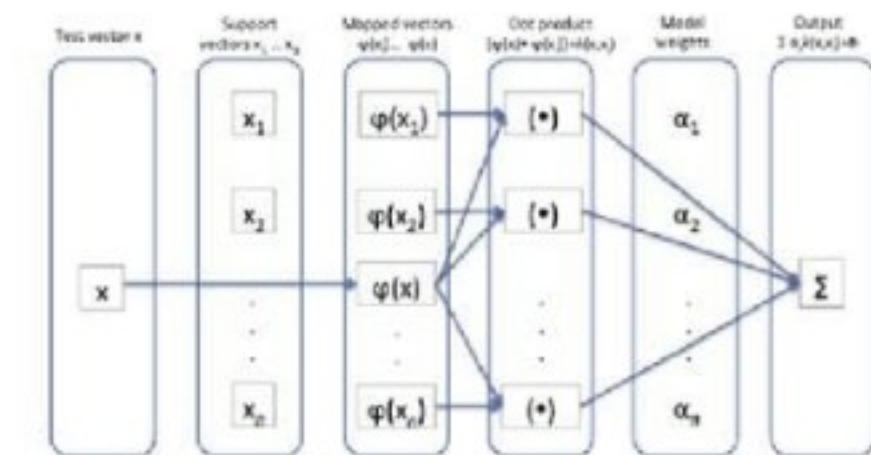
Artificial Neural Networks
  • Multilayer Perceptron

Linear regression trees

Exogenous variables: GDP, Private consumption growth, Unemployment rate
Dummy variable: "Brexit"
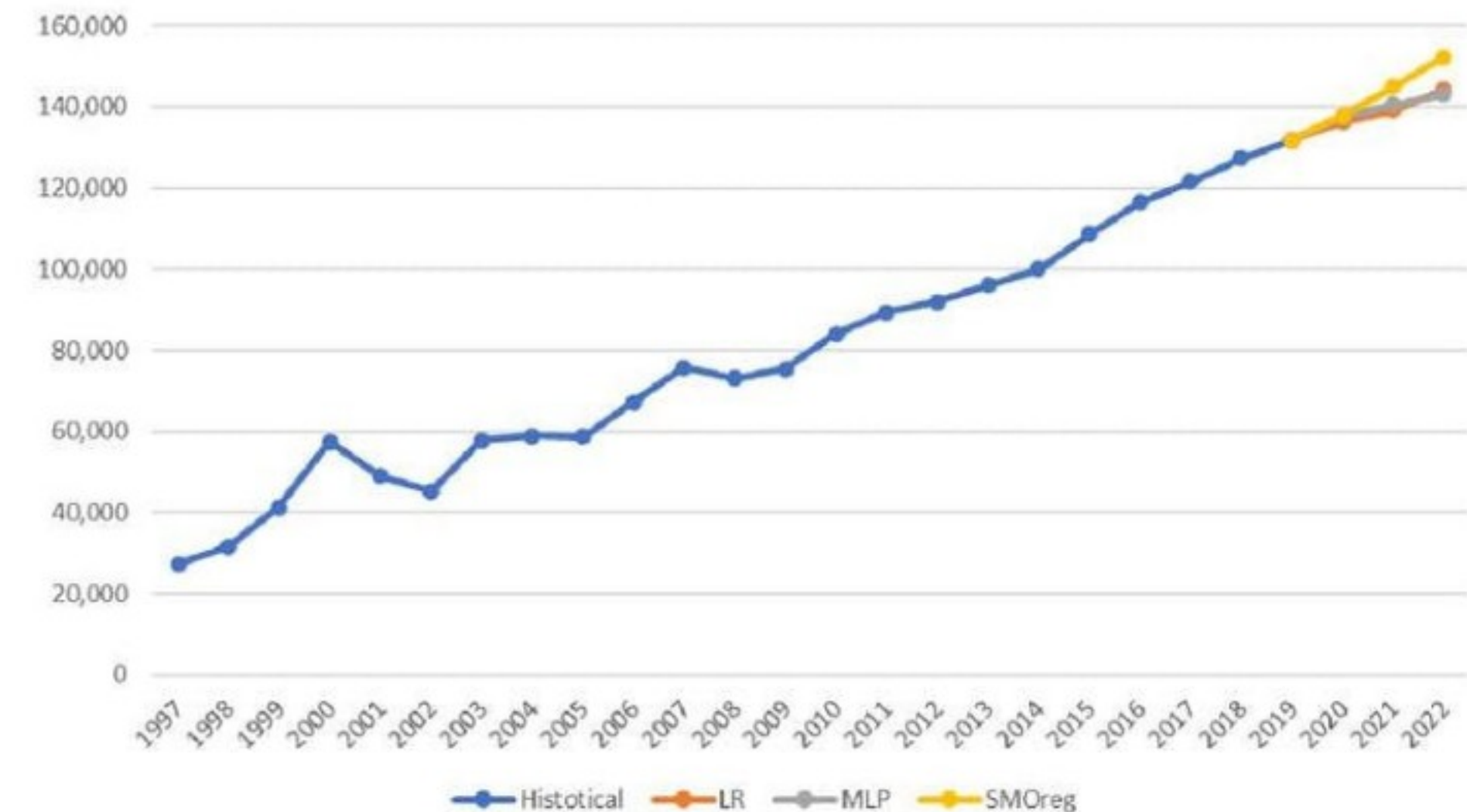
# REVENUES FORECASTING

## Budgetary Process

- Forecast results

- Historical information, trends and population changes/impacts

- Prudent approach

- Pandemic crisis

Forecasting results
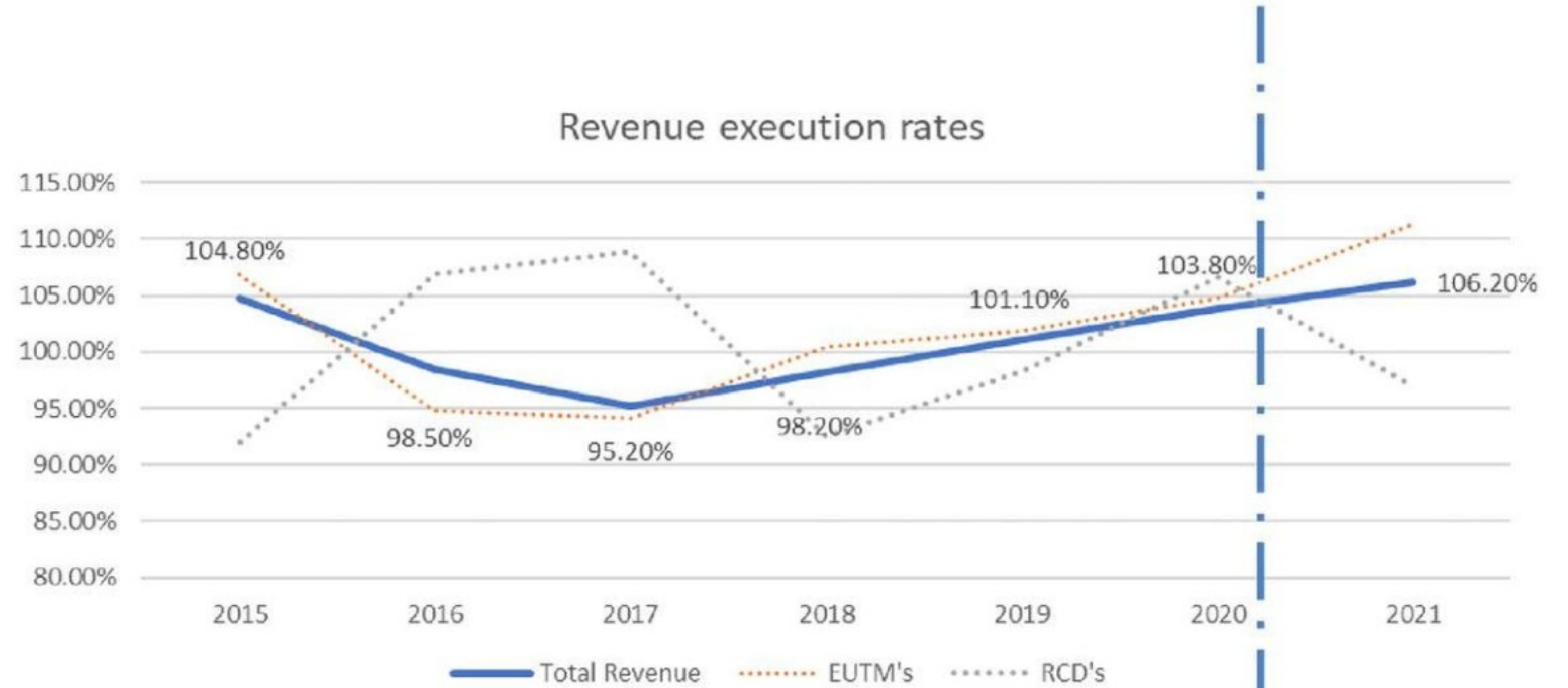
## Expenditure structure

- Budget is constructed, simultaneously, in different layers

- Several layers of information (information cube)
  - Strategic Driver (3)
  - Financial envelopes (4)
  - Activities (77)
  - Natures (4 titles and 76 budget lines)
  - Cost concepts (420)
  - Departmental layer

- Incremental or zero budgeting technics depending on the case

# ACTIVITY BASED BUDGET

| STRATEGIC DRIVERS | BUDGET 2021 (million EUR) |
|---|---|
| SD1 - Interconnected, efficient and reliable IP system for the Internal Market | 57.0 |
| SD2 - Advanced customer-centric services | 93.6 |
| SD3 - Dynamic organisational skill sets and an innovative workplace of choice | 97.2 |
| TOTAL | 247.9 |
| Contribution to EU policies | 32.6 |

| COST HEADING - FINANCIAL RESOURCES | BUDGET 2021 (million EUR) |
|---|---|
| Operational Activities | 186.7 |
| Observatory Activities | 10.8 |
| EU Cooperation (Article 152 EUTMR) | 34.5 |
| Strategic Plan 2025 projects | 15.9 |
| TOTAL | 247.9 |
| Contribution to EU policies | 32.6 |



| STRATEGIC DRIVERS | BUDGET 2021 (million EUR) |
|---|---|
| SD1 - Interconnected, efficient and reliable IP system for the Internal Market | 57.0 |
| EU Agencies Network | 0.4 |
| International Cooperation and Relations | 2.2 |

| STRATEGIC DRIVERS | BUDGET 2021 (million EUR) |
|---|---|
| SD2 - Advanced customer-centric services | 93.6 |
| Management of IP operations | 44.2 |
| Management of IP litigations | 3.0 |
| Management of IP appeals | 14.1 |
| Customer management | 24.0 |
| Customer support management | 0.5 |
| SP2025 Projects | 4.3 |
| SP2025 Projects - Existing Staff | 3.6 |

| STRATEGIC DRIVERS | BUDGET 2021 (million EUR) |
|---|---|
| SD3 - Dynamic organisational skill sets and an innovative workplace of choice | 97.2 |
| Management of Human Resources | 7.8 |
| Infrastructure and logistics management | 20.7 |
| Academy activities | 6.6 |
| Communication activities | 3.6 |
| Financial Management | 8.7 |
| Corporate Governance | 3.0 |
| Data Protection | 0.5 |
| Internal Audit | 0.5 |
| Non-IP legal advice & litigations | 2.1 |
| General IT services | 30.3 |
| SP2025 Projects | 9.1 |
| SP2025 Projects - Existing Staff | 4.1 |

# ACTIVITY BASED MANAGEMENT AND KEY PERFORMANCE INDICATORS

## Advantages

- Clear and transparent measurement structure (allocation of cost)

- Clear accountability matrix

- Transparent decision making

- Efficient control (identify and measure deviations)

- Less time of response (corrective actions) and more precision

- Flexible and tailor-made reporting (powerBI)

> "If You Can't Measure It, You Can't Improve It"
> Peter Drucker

# ACTIVITY BASED MANAGEMENT AND KEY PERFORMANCE INDICATORS

## Control methodology

- Quarterly revision process (Budget Execution Report)

- KPI's and Product Costs


Budget forecast accuracy (Revenue)


Budget forecast accuracy (Expenditure)

EU IPO
EUROPEAN UNION
INTELLECTUAL PROPERTY OFFICE

WIPO
WORLD
INTELLECTUAL PROPERTY
ORGANIZATION
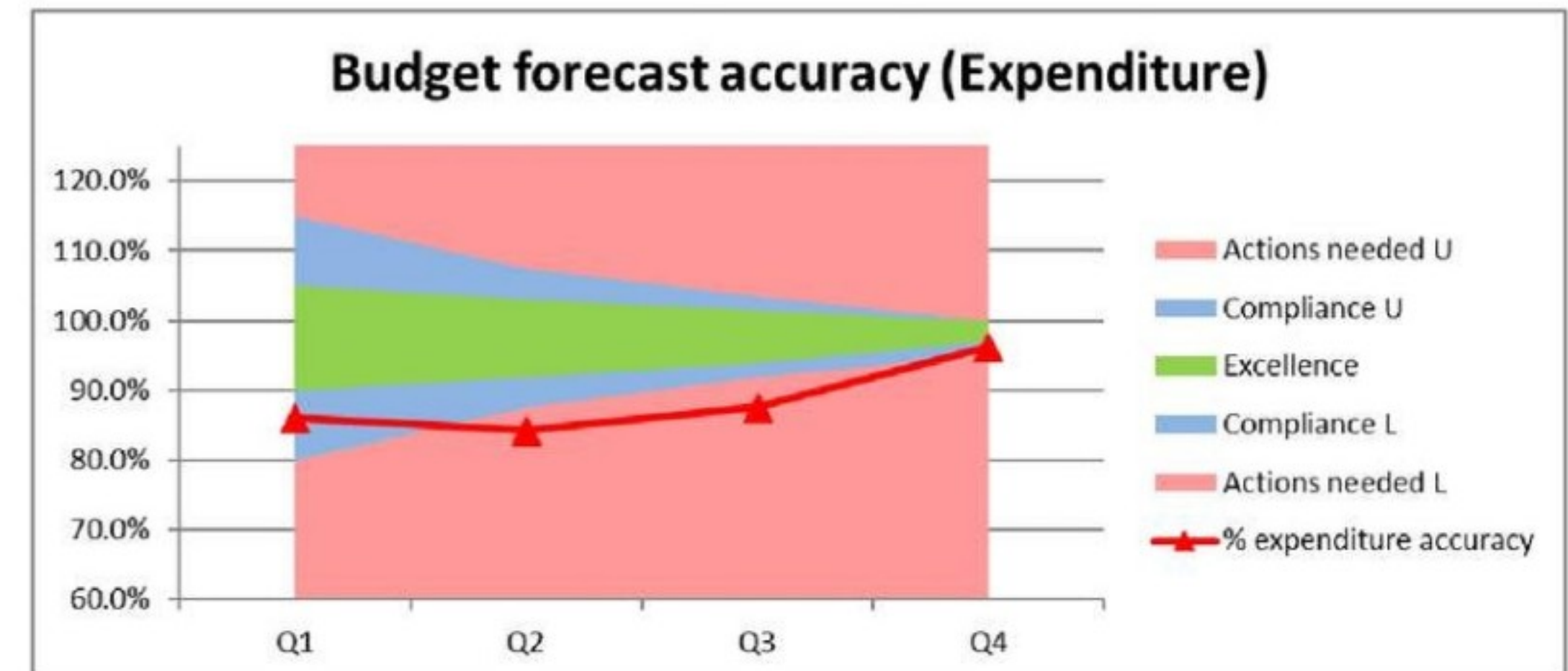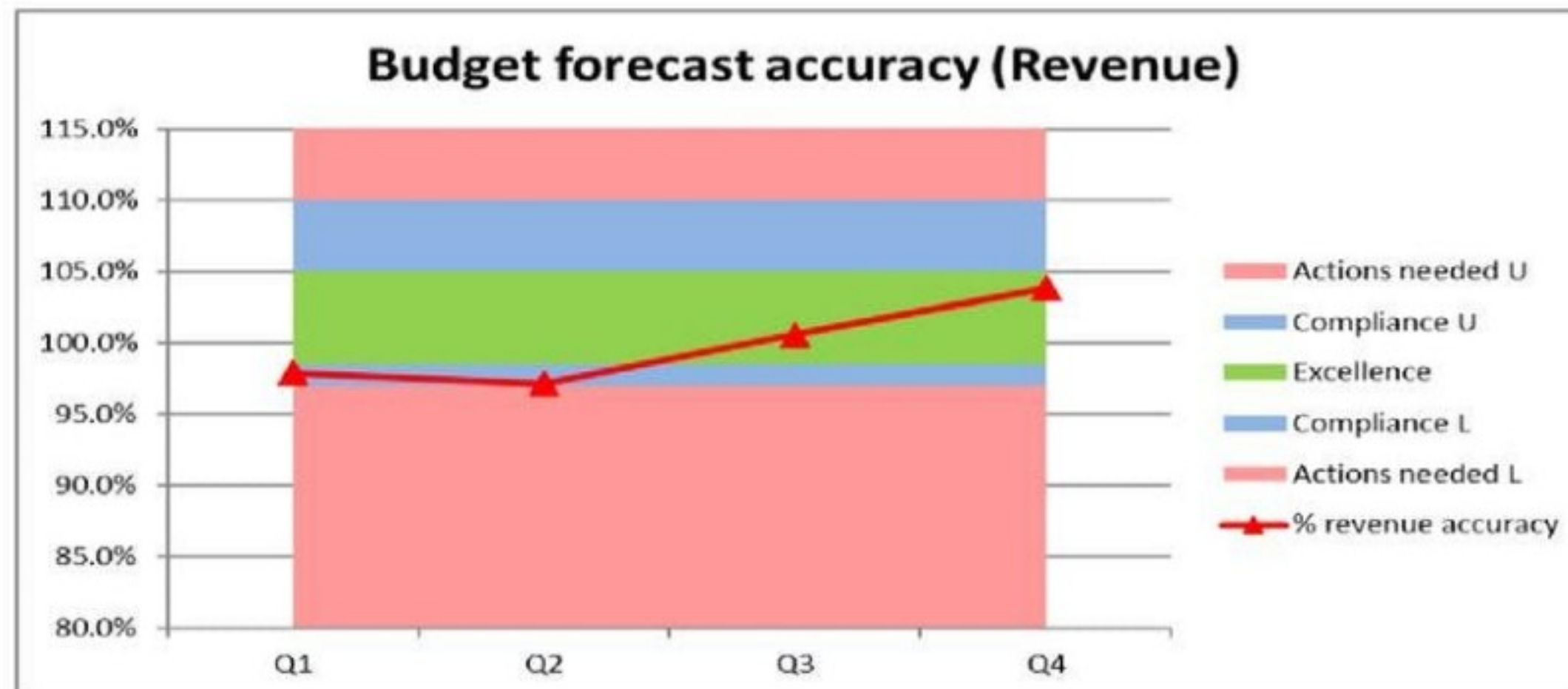
# ACTIVITY BASED MANAGEMENT AND KEY PERFORMANCE INDICATORS

## Product Costs

- ## Global unit costs
- ## Products and services unit costs
  - Full direct allocation
  - Direct and Indirect contribution of activities
  - Output

| Unit Cost | Budget 2020 (EUR) | Execution 2020 [1] (EUR) | Variation |
|---|---|---|---|
| Global Product Unit Cost | 1 506 | 1 354 | -10.1% |
| Manpower Global Product Unit Cost | 725 | 659 | -9.1% |

[1] Based on revenue recorded and payments.

| Services costs | Budget 2020 (million EUR) | Execution 2020 [1] (million EUR) | Variation |
|---|---|---|---|
| EU Cooperation Projects | 40.5 | 39.1 | -3.6% |
| EU Funded Projects | 8.0 | 7.7 | -4.4% |
| Legislative Reform | 0.0 | 0.0 | -3.0% |
| SP2020 Projects | 11.1 | 10.5 | -5.6% |
| SP2025 Projects | 9.5 | 10.2 | 7.5% |
| Cooperation Translation Centre | 1.8 | 1.5 | -15.5% |
| EU network managment | 2.1 | 2.2 | 5.0% |
| non-EU Cooperation | 5.4 | 4.7 | -12.8% |
| Enforcement | 6.3 | 5.2 | -17.3% |
| IP in the Digital World | 2.5 | 1.8 | -26.8% |
| IP strengthening | 5.2 | 4.5 | -13.2% |
| Public Awareness | 3.6 | 3.5 | -3.2% |
| Contribution to EU policies | 0.0 | 0.2 | |

| Product costs | Budget 2020 (EUR) | Execution 2020 [1] (EUR) | Variation |
|---|---|---|---|
| Litigations | 12 749 | 10 400 | -18.4% |
| IP appeals | 9 450 | 9 885 | 4.6% |
| EUTM Application | 320 | 280 | -12.3% |
| EUTM Cancellation | 5 010 | 4 713 | -5.9% |
| EUTM Opposition | 2 276 | 2 398 | 5.4% |
| EUTM Recordal | 115 | 119 | 3.5% |
| EUTM Renewal | 10 | 5 | -50.1% |
| RCD | 61 | 56 | -8.8% |
| RCD Invalidity | 3 758 | 3 386 | -9.9% |
| RCD Recordal | 171 | 170 | -0.3% |
| RCD Renewal | 3 | 3 | 25.2% |

[1] Based on revenue recorded and commitments.

**EU IPO**
EUROPEAN UNION
INTELLECTUAL PROPERTY OFFICE

www.euipo.europa.eu

@EU_IPO

EUIPO

EUIPO.EU

## Segment 2 cont..

## Forecasting IP applications for financial management

**Presenter:** Mr. Hao Zhou, Director of Statistics, Statistics and Data Analytics Division, Department for Economics and Data Analytics, IP and Innovation Ecosystems Sector, WIPO

# WIPO Financial Management

*Department of Program Planning and Finance*

Program and Budget
> Expenditure
> Income

*Department of Economics and Data Analytics*

**Filing & income forecasting**

# WIPO IP Filing Forecasting

Filing & income forecasting – providing important information for:

       Operational planning

       Financial planning

Income forecasting – applying fee structure to application volumes
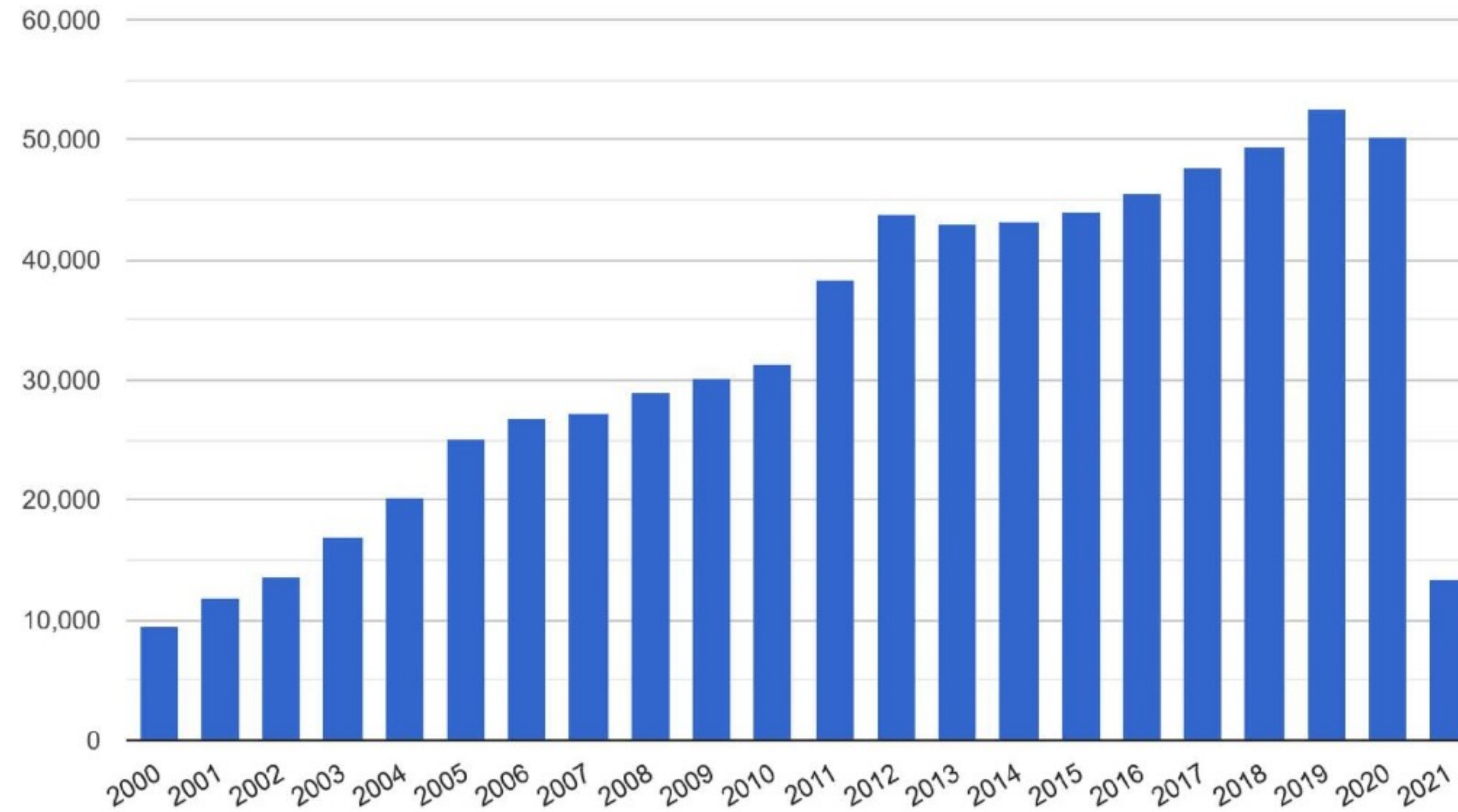
# Basics of Forecasting

– Based on historical trends

– Monthly vs Yearly time series

– Uncertainty & data volatility

– Unpredictable events

– Understand forecasting errors

– Forecasting range: $e_h = \pm c * e\sqrt{h}$
  c=1.96 (95%); h=1,2,3…; e=standard error

– Consider external variables

– Adjust method in case of structural break

# Basics of Forecasting – Data example
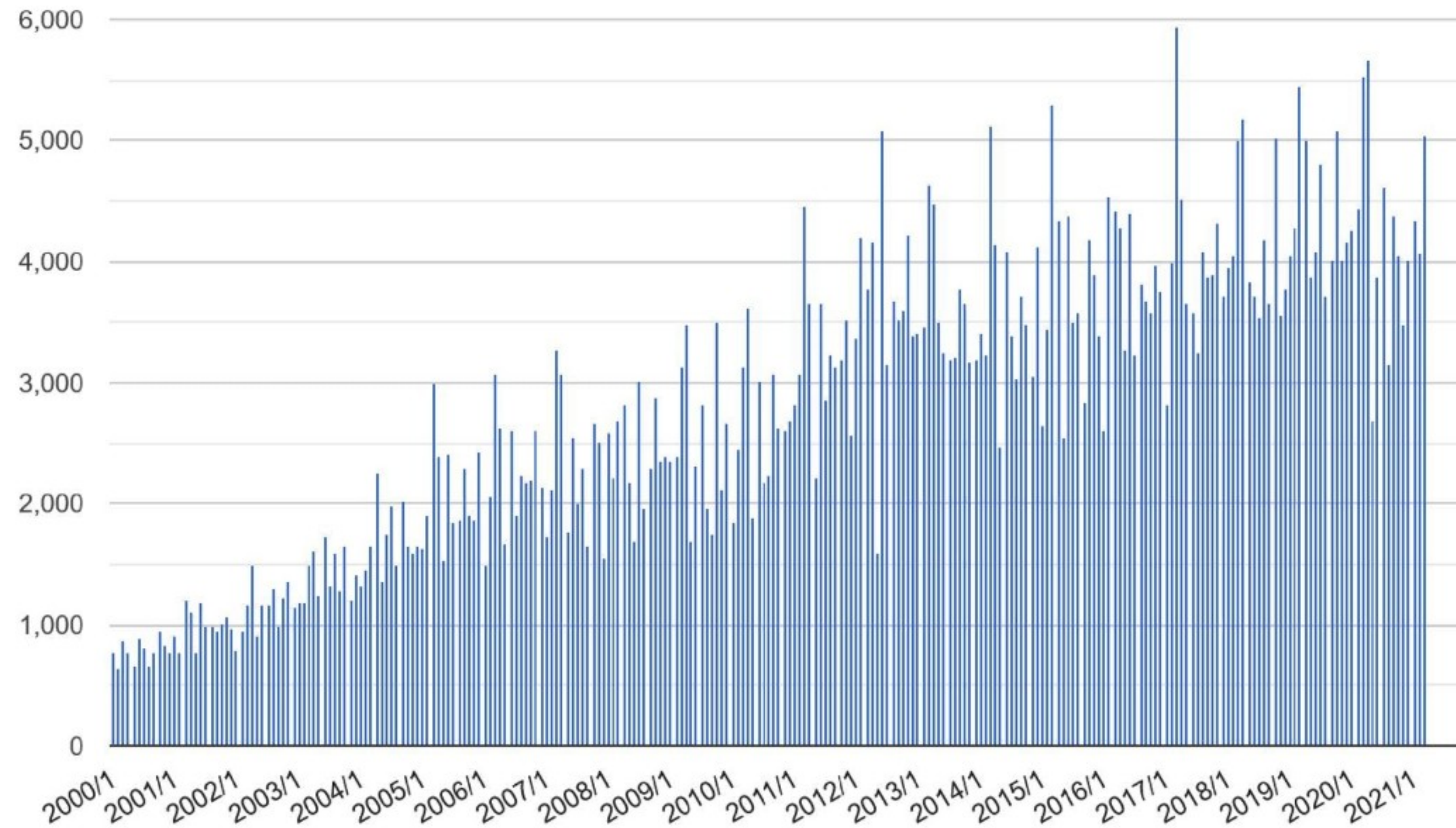
# Basics of Forecasting – Data example

# Basics of Forecasting – Tools: Excel

| | |
|---|---|
| 2000 | 9467 |
| 2001 | 11977 |
| 2002 | 13712 |
| 2003 | 16991 |
| 2004 | 20279 |
| 2005 | 25115 |
| 2006 | 26861 |
| 2007 | 27192 |
| 2008 | 29122 |
| 2009 | 30230 |
| 2010 | 31382 |
| 2011 | 38417 |
| 2012 | 43818 |
| 2013 | 42979 |
| 2014 | 43299 |
| 2015 | 44082 |
| 2016 | 45601 |
| 2017 | 47654 |
| 2018 | 49481 |
| 2019 | 52549 |
| 2020 | 50221 |
| 2021 | |

Microsoft Excel function

=FORECAST.LINEAR(A22,B1:B21,A1:A21)
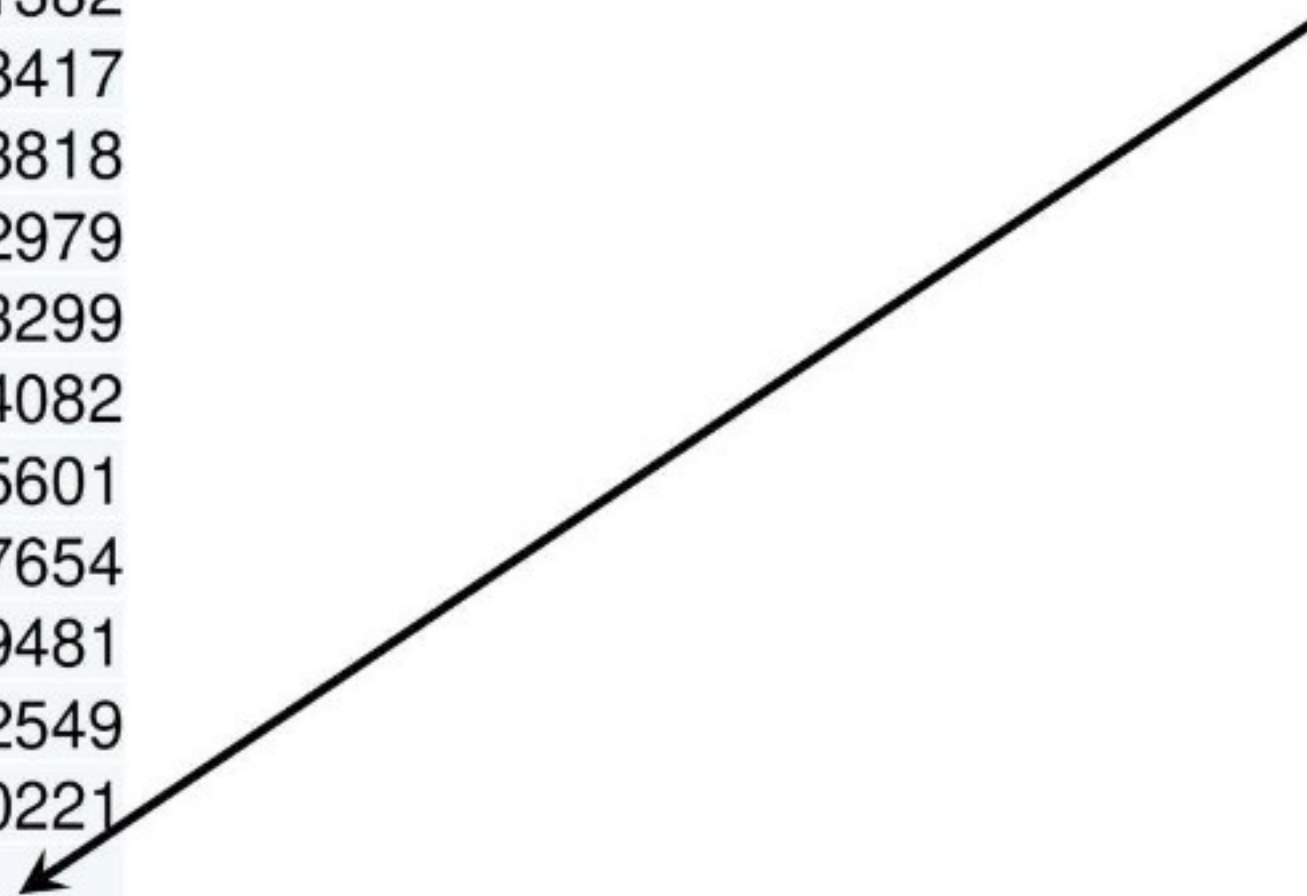
# Basics of Forecasting – Tools: STATA

```
17-user Stata network perpetual license:
        Serial number:   301506278440
          Licensed to:  WIPO


Notes:
     1.  Unicode is supported; see help unicode_advice.
     2.  New update available; type -update all-
. insheet using c:/d/test.csv, clear
(2 vars, 22 obs)

. tsset year
        time variable:  year, 2000 to 2021
                delta:  1 unit

. regress filings year
```

| Source | SS | df | MS |  | Number of obs | = | 22 |
|--------|-----|-----|------|--|---------------|---|-----|
|        |    |    |      |  | F(1, 20)      | = | 725.93 |
| Model  | 4.1699e+09 | 1 | 4.1699e+09 | | Prob > F | = | 0.0000 |
| Residual | 114884002 | 20 | 5744200.09 | | R-squared | = | 0.9732 |
|        |    |    |      |  | Adj R-squared | = | 0.9718 |
| Total  | 4.2848e+09 | 21 | 204038067 | | Root MSE | = | 2396.7 |

| filings | Coef. | Std. Err. | t | P>|t| | [95% Conf. Interval] | |
|---------|-------|-----------|---|-------|------|------|
| year | 2170.048 | 80.54165 | 26.94 | 0.000 | 2002.041 | 2338.055 |
| _cons | -4328443 | 161929.8 | -26.73 | 0.000 | -4666222 | -3990663 |

# Basics of Forecasting – Output



IP Filing Forecast

Legend: Forecast — Low (90%) — High (90%)
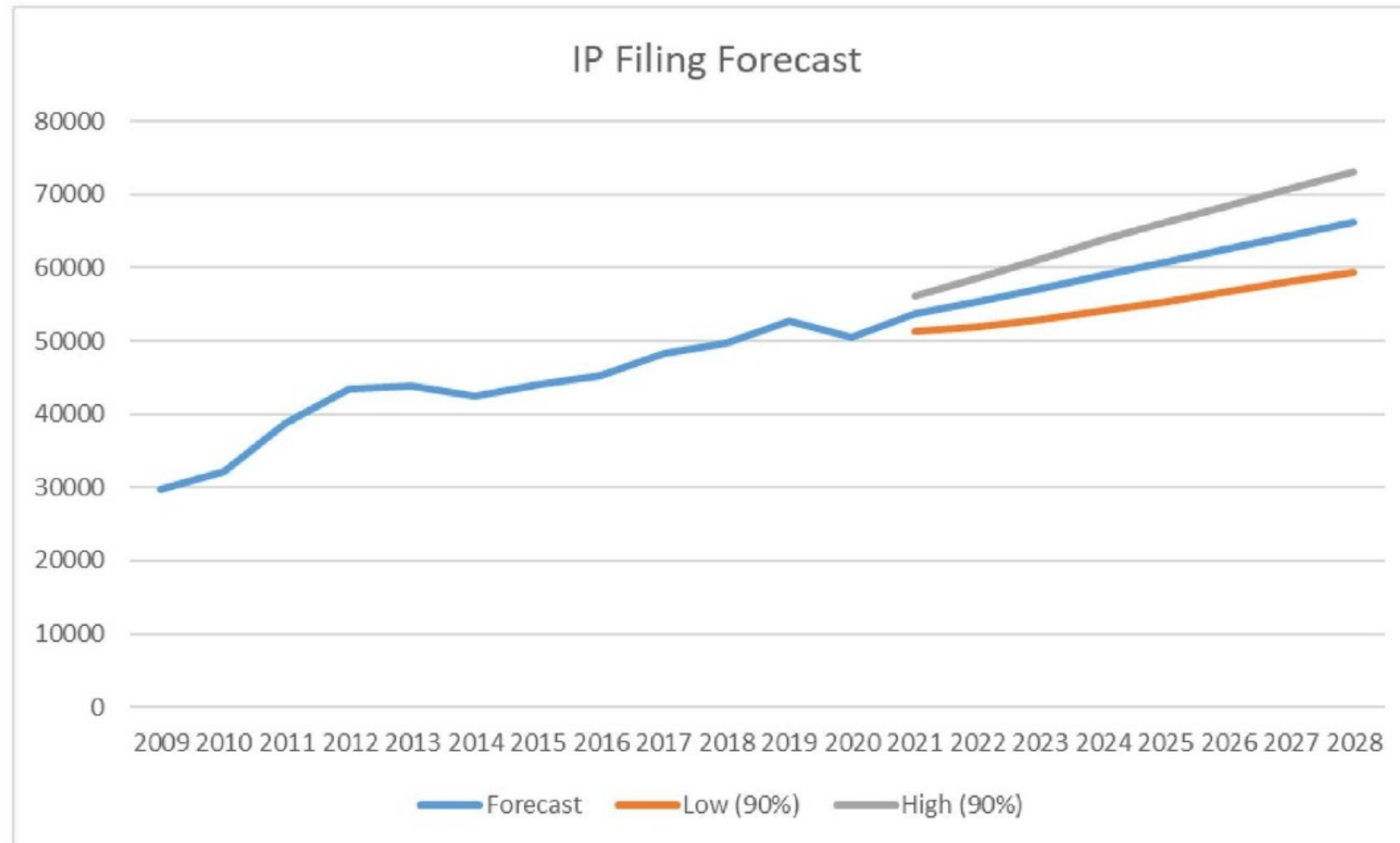
# Use of Forecasting

– Assess how important the IP filing volume is to your office:

      Funding channel

      Impact factor

– Recognize/Accept errors

– Risk-averse adjustment

# Thank you.

Contact: ipstats.mail@wipo.int

# Open Forum

**You can ask questions/share thoughts and comments using:**

- menti.com using the code: **1704 3861** ; *or*

- GoToMeeting chat box; *or*

- Request the floor in the GoToMeeting room

*Please ensure that microphones are muted*

# You may ask questions/share thoughts and comments..

0 questions
0 upvotes

# Synthesis and Closing Remarks for Day 1 and 2 of eHIPOC

Presenter:    Mr. Andrew Michael Ong, Director, Division for Asia and the Pacific, Regional and National Development Sector, WIPO

# Thank you for joining us today!

## We look forward to seeing you again soon!