

# Patent Portfolio Economics:

The purpose of R&D is to create new products and services which are competitive in the marketplace. In order for advantages to be maintained, the result of such R&D must be securitized as intellectual property assets. These assets may take the form of patents, trademarks, copyrights, or trade secrets, all of which require investment to establish and maintain. In this article, we will examine the evolution of financials in developing and maintaining a patent portfolio and how this impacts a company's ability to secure IP assets.

The key focus of many development stage companies is on creation and deployment of new products and services. As part of the research and development process, intellectual property is created and captured. The securitization of IP may be done through the applications for patents in the relevant jurisdictions. The grant of a patent results in an asset for the company.

As with any asset, patents require initial and ongoing investment. The investment is comprising of filing fees, drafting (preparation) fees, prosecution fees, issuance fees, and maintenance fees/annuities.

The investment allocated toward intellectual property varies from firm to firm, but generally ranges from 1% to 3% of the R&D budget<sup>1</sup>. The actual boundaries of this investment is driven by the IP intensity of the sector as well as the composition of the portfolio, which we're going to examine via the case studies.

The basic premise is that at a given level of R&D investment, there is a proportional investment that will need to be made to secure the results of such R&D into an asset which may be leveraged in the marketplace. IP investment as a percentage of R&D ranges from 1 to 3%. R&D investment as a percentage of revenues varies depending upon the type and stage of a company's lifecycle. This number ranges from 5% to 50%.

Using a common revenue baseline and defining profiles for 3 differences cases, we construct the IP investment profile over the years as the portfolio grows. The assumptions and results are presented in the case studies.

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<sup>1</sup> IPO Corporate IP Management Benchmarking Survey, 2011

## CASE 1

In our first case. We're taking a midsized company with revenue of baseline revenue in year 1 of \$50M, with growth of 5% per annum with R&D at 10% of revenue and a budgeted IP investment of 2% of R&D.

### Case 1 - Steady Growth

Parameters	Value	Note
Starting Revenue	\$ 50M	
Revenue Growth	5%	Flat
R&D as % of Revenue	10%	Flat
IP Investment as % of R&D	2%	Flat
R&D Intensity	1 to 1.5 Patents / \$1M R&D	
Foreign Filing %	20%	
Countries with Foreign Filings	3	

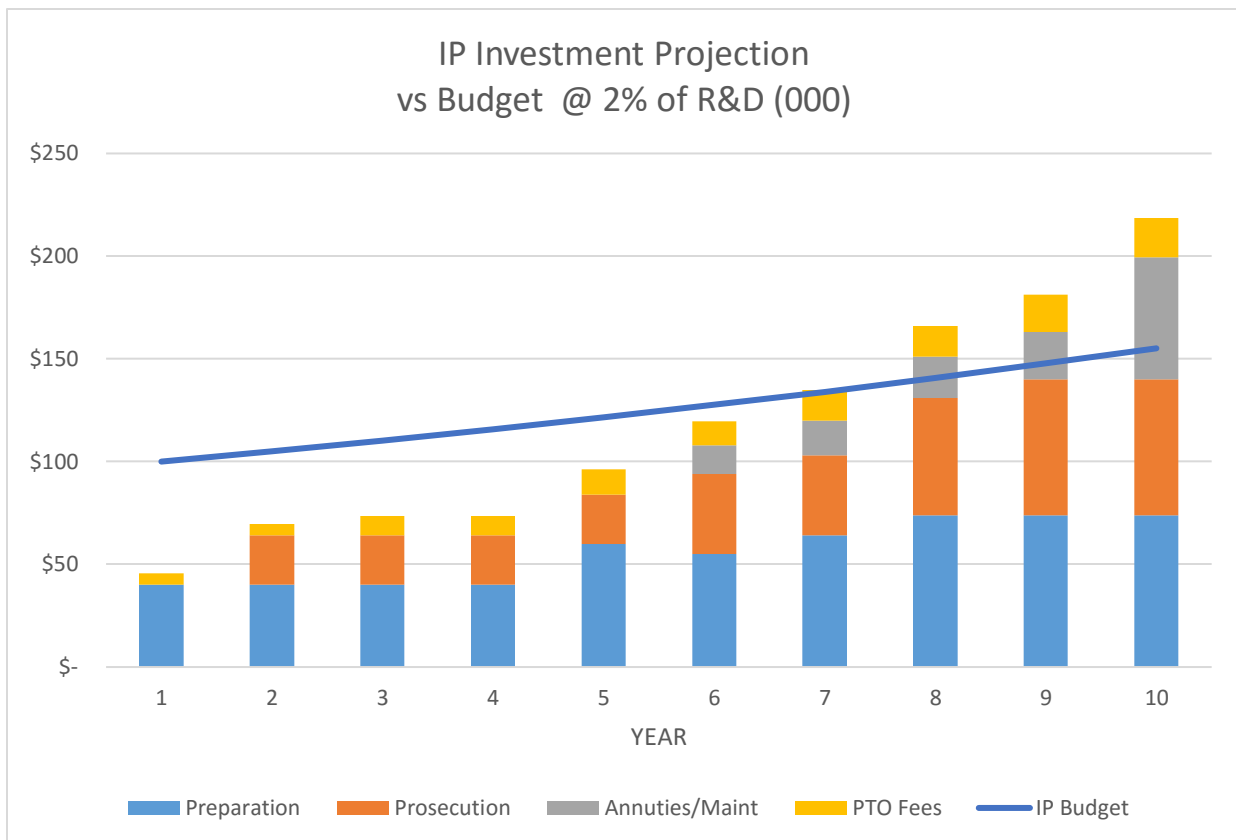


Figure 1.1

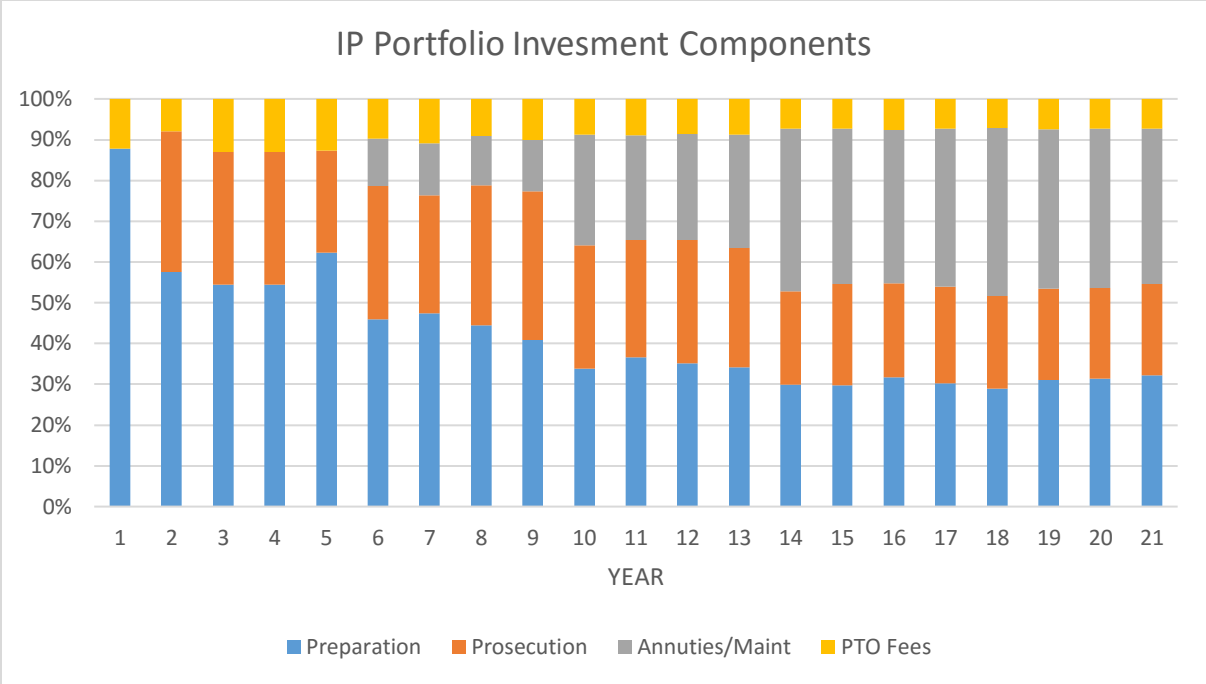


Figure 1.2

Synopsis:

In the steady growth scenario (Figure 1.1), the baseline investment grows gradually, as expected, and the required investment does exceed the budget limit until year 7. In fact, IP investments can be increased in yearly years without compromising the IP budget. Figure 1.2 illustrates the components of IP investment on a percentage basis. As expected prosecution and maintenance grow as the portfolio matures. The steady state investment profile results in a 30% allocation toward new matters, 20% toward prosecution, and 10% toward fees and 40% toward maintenance/annuities. This portfolio should be readily manageable through asset monetization in later years as there should be licensable or divestible assets by year 7, so that revenues may be secured to offset investments over above the budgeted limit.

## CASE 2

In this case, we're taking a midsized company with revenue of baseline revenue in year 1 of \$50M, with growth of 100% per annum, decremented each year until it reaches as steady state growth of 8%. with R&D at 35% of revenue in year one and 8% at steady state. It has a budgeted IP investment of 2% of R&D.

### Case 2 – High Growth + High R&D

Parameters	Value	Note
Starting Revenue	\$50M	
Revenue Growth	100% in year 1	Decrement to 8% steady state
R&D as % of Revenue	35% in year 1	Decrement to 8% steady state
IP Investment as % of R&D	2%	
R&D Intensity	1 to 1.5 patents/\$1M R&D	
Foreign Filing %	20%	
Countries with Foreign Filings	3	

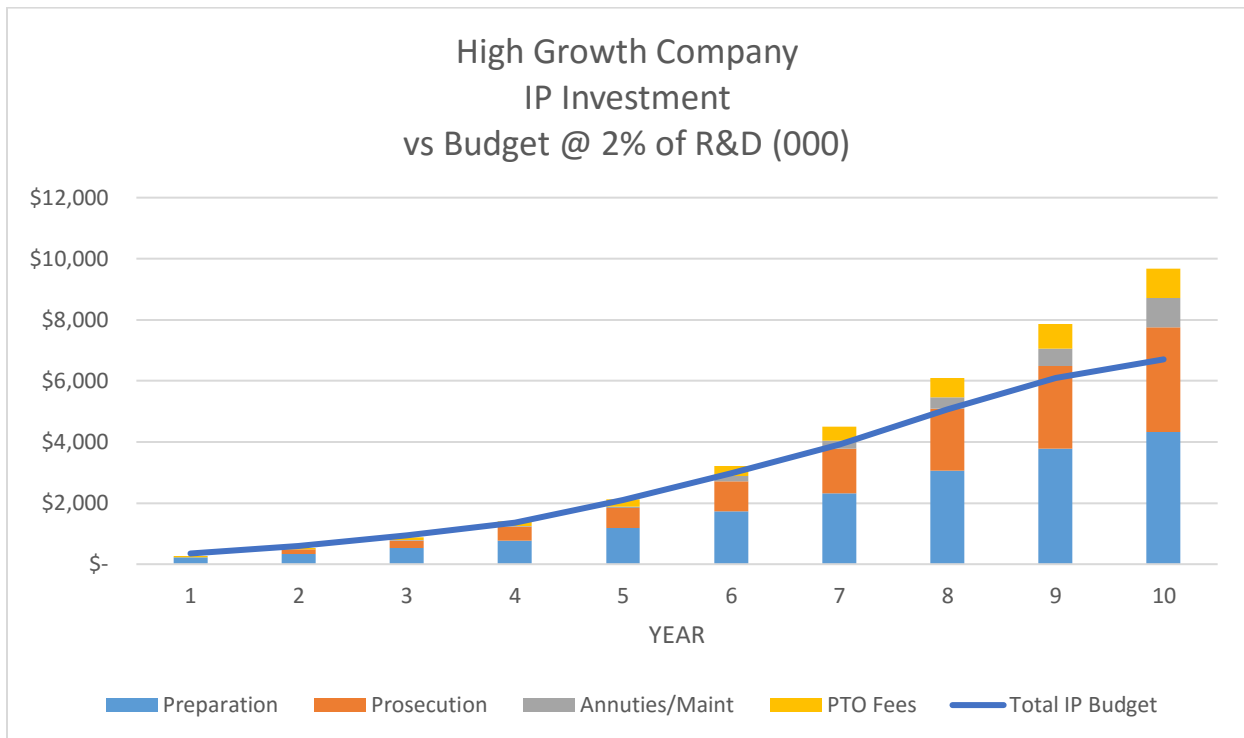


Figure 2.1

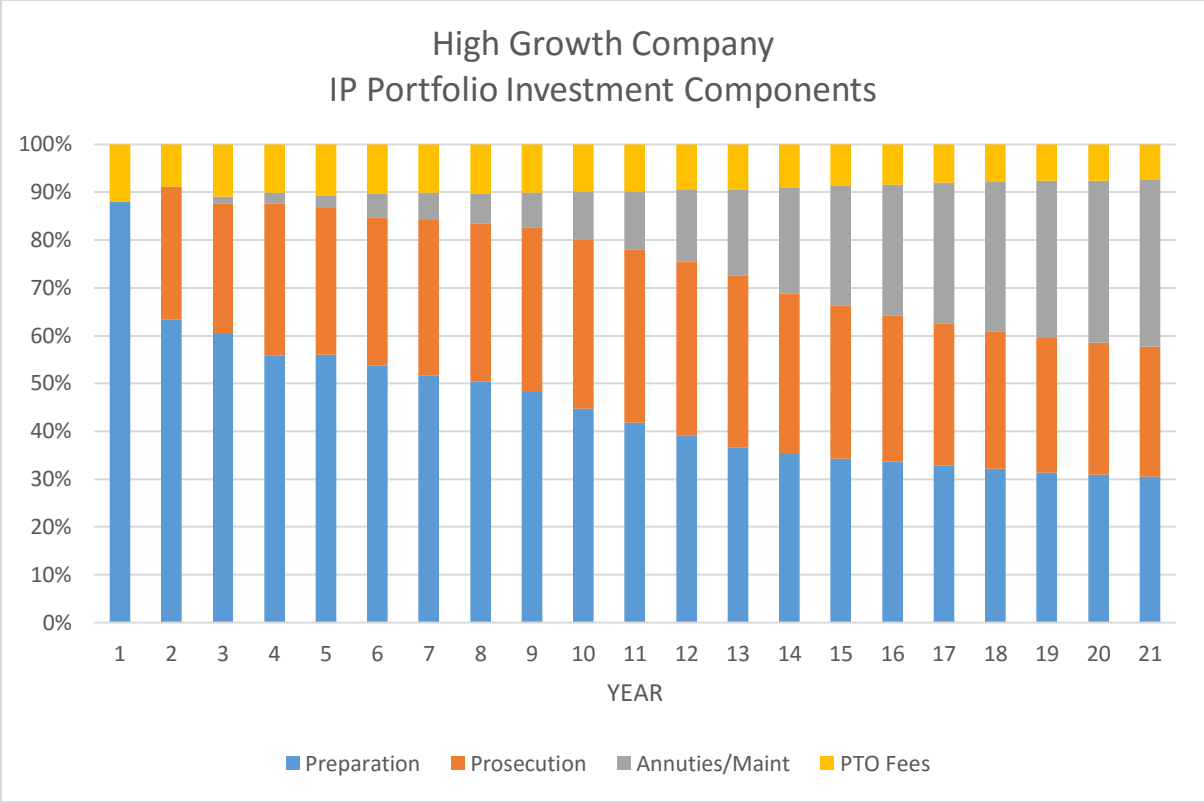


Figure 2.2

Synopsis:

In the rapid growth scenario (Figure 2.1), the baseline investment grows rapidly, as expected, and the required investment does exceed the budget limit until year 6. Figure 2.2 illustrates the components of IP investment on a percentage basis. As expected prosecution and maintenance grow as the portfolio matures. The steady state investment profile results in a 30% allocation toward new matters, 23% toward prosecution, and 8% toward fees and 34% toward maintenance/annuities. Like the previous case, there should be monetizable assets by the time the portfolio investment begins to encroach on the budget limit, thus offering the potential for income to offset any excess required investment.

CASE 3:

In this last case, we're taking a mid-sized company with revenue of baseline revenue in year 1 of \$50M, with growth of 35% per annum, decremented each year until it reaches a steady state growth of 6%. with R&D at 20% of revenue in year one and 10% at steady state. It has a budgeted IP investment of 2% of R&D. For the 1<sup>st</sup> 4 years, it will also have an additional allocation \$10M per year toward R&D that is funded through outside funds.

Case 3 – Venture Funded R&D

Parameters	Value	Note
Starting Revenue	\$50M	
Revenue Growth	35%	Decrement to 6% steady state
R&D as % of Revenue	20%	+10M/Annum in YR1-4 from VC, decrement to 10% steady state
IP Investment as % of R&D	2%	
R&D Intensity	1 to 1.5 patents/\$1M R&D	
Foreign Filing %	20%	
Countries with Foreign Filings	3	

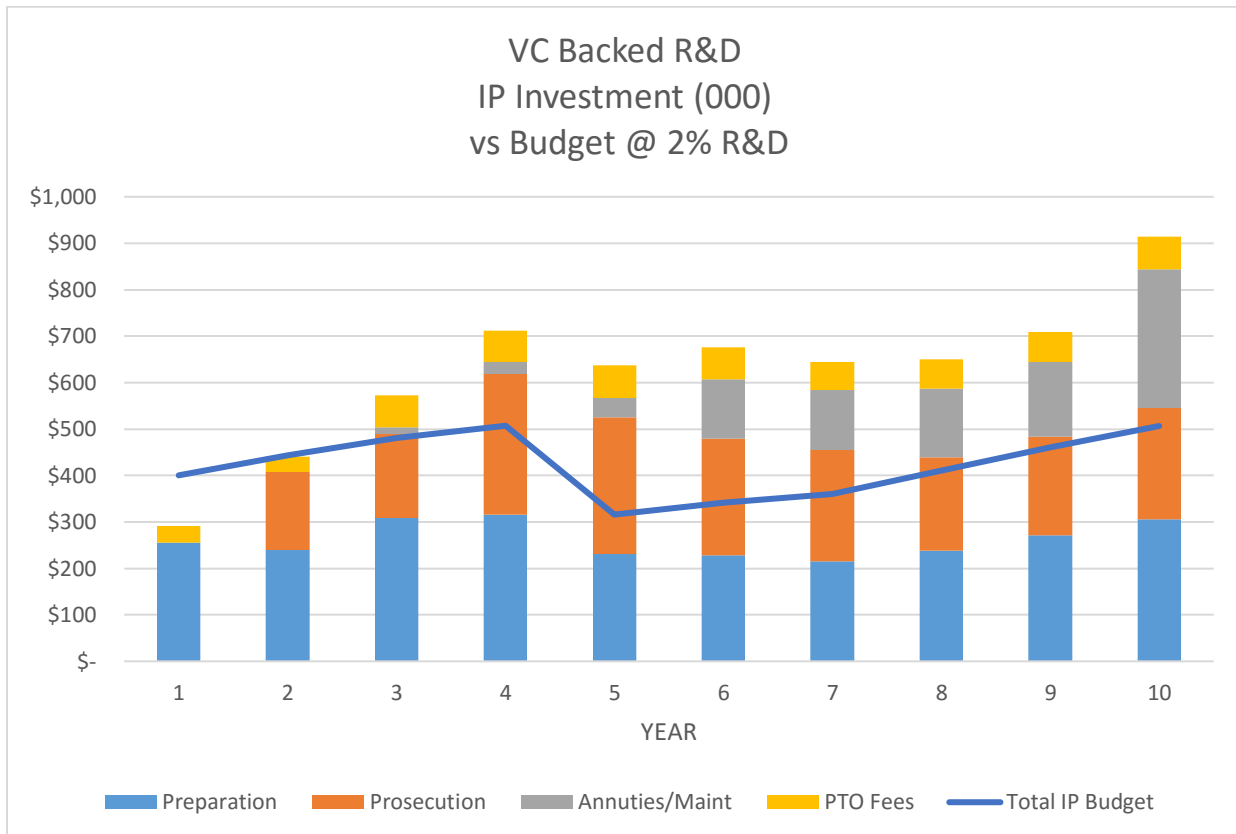


Figure 3.1

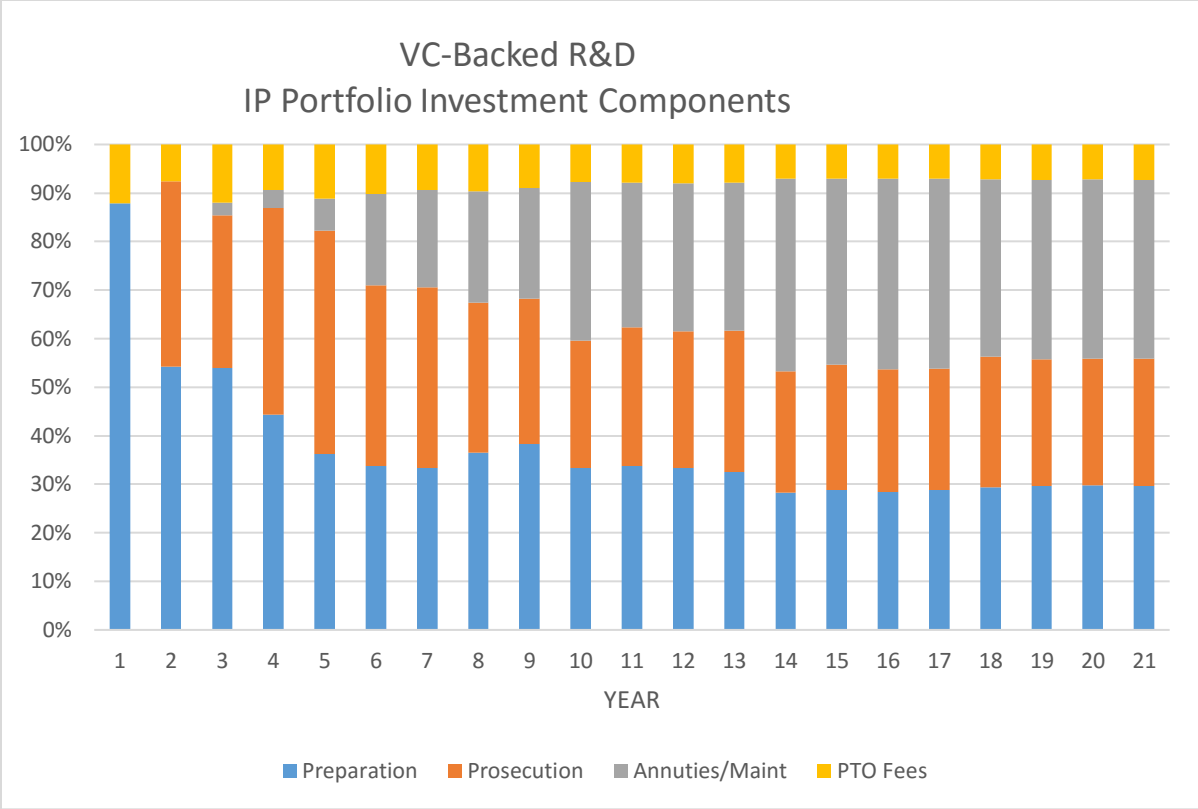


Figure 3.2

Synopsis:

Funded R&D scenario (Figure 3.1), the baseline investment grows quickly, and the required investment exceeds the budget limit quickly, in year 3. Figure 3.2 illustrates the components of IP investment on a percentage basis. The steady state investment profile results in a 30% allocation toward new matters, 25% toward prosecution, and 8% toward fees and 34% toward maintenance/annuities. Noteworthy is how quickly the required investment exceeds the 2% IP budget. This firm is faced with choices to make early in the lifecycle: either to increase the IP budget (to 4% of R&D) or decrease securitization of assets. The licensing option, though attractive, is unlikely to result in significant monetization as the asset base, in early years, has not been established (few granted patents), unless applications are fast-tracked at substantial additional investment.

Conclusion:

The key fact is that investments in aging portfolio will necessarily tilt toward older assets, irrespective of the initial conditions. In later years (Figure 4.2 vs Figure 4.1), the required investment in maintaining a portfolio crowds out the funding for and contribution toward new assets.

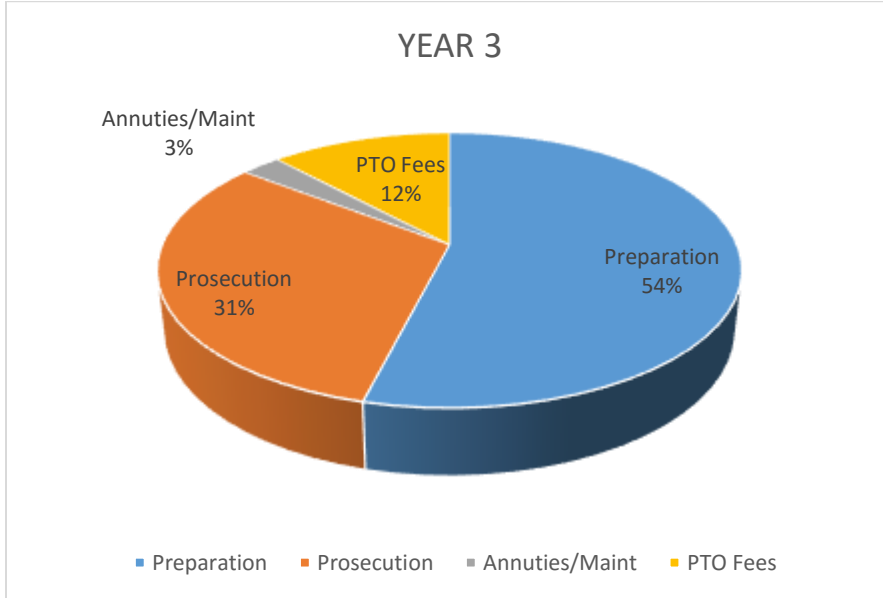


Figure 4.1

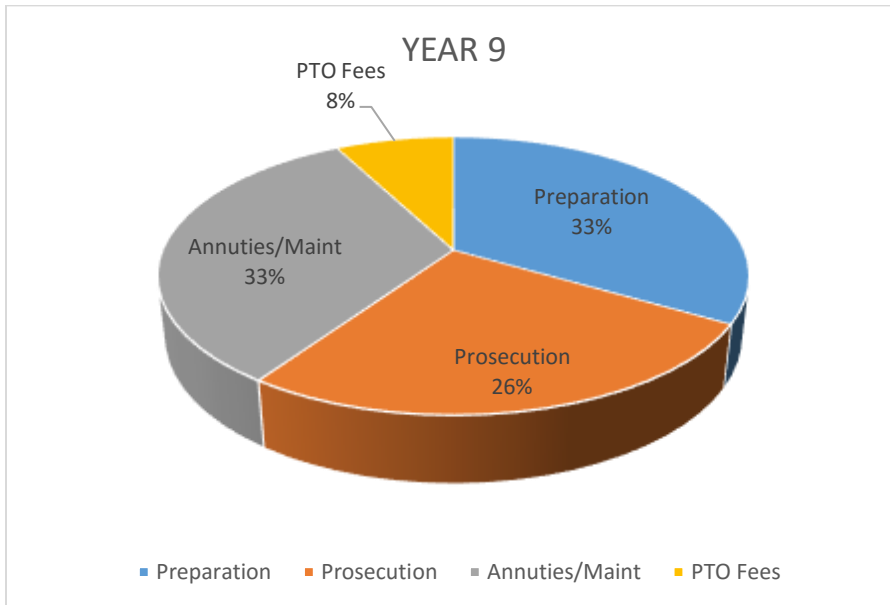


Figure 4.2

While control of prep and pros costs are key to ensuring that IP investments are in line with financial metric, proactive portfolio development & management is key to ensuring that IP budgets are allocated appropriately and that there is funding for new IP assets is not compromised.