**Progression Analysis**

**High Performance Athlete Development**

High Performance Sport New Zealand

# Pilot Analysis – Cycling

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# **Purpose**

HP Athlete Development wish to grow collective understanding of the pathways from development level (youth and junior) towards senior level competition. The role of Intelligence in this piece of work is the ability to utilise performance results to determine the pathways of historical medallists. By investigating the progression of performance in the years leading up to a medal winning performance, HPSNZ and Sport expectations can be aligned closer with facts.

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| **Why** | Equip HPSNZ and NSOs with facts to understand the varied pathways towards Olympic medal. Deepen understanding of performance pathways from development levels to senior elite levels. |
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| **How** | Utilise historical performance results to describe the progression of performance towards elite success. Investigate interactions between genders, disciplines, and ages to refine expectations of developing athletes |
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| **What** | Analyse historical competition results (via Gracenote) to test existing theories and intuitions.  Develop methods that are reproducible, adaptable, and future-focussed to enable continual improvement and an evolving collective understanding of performance pathways. |

**Initial engagement**

An initial meeting took place in February 2020. Ken Lynch and Dave Wright from HP Athlete Development conveyed the questions they seek to answer. Ben Day and Chris Rawlings listened and began to interpret the role Intelligence can play in answering these questions.

## NZ Olympic/Paralympic Team Profile

**HPSNZ Board Papers 2013/2014**

Prior to the meeting Ken shared Board papers that outlined the predicted makeup of the 2020 NZ Tokyo Olympic team. These papers described the profile of the predicted team by sport and categorised into first-time v returning Olympians. Also mentioned were the implications of returning Olympians anticipated to retire, along with comparisons of NZ team profile to other Olympic nations.

It was acknowledged that Intelligence can be involved with an updated Board Paper after the Tokyo 2020 Olympics and Paralympic Games. The role of Intelligence will be in gathering data on team makeup and improving on the provided insights, such as:

* Clustering/grouping nations to reflect maturity/capacity (financial, political) of system to enable more useful comparisons
* Analyse “first-time” sports that appear at the Game for the first time.
* Differentiate returning medallists from returning medals (i.e. medal-winning campaigns)

## Performance Pathways

**Development levels to senior levels**

An enduring question for HP Athlete Development relates to the transitions of development to senior competition. With a deeper understanding of the typical timelines and differences between and within sports it is possible to better frame expectations for athlete progressions. By growing this collective knowledge about the NZ system it will be possible to:

* test expert intuitions,
* identify nuanced detail about sports and sport types, and
* ultimately adjust development pathways to leverage NZ sport system strengths

This work will bring confidence to HP Athlete Development methods through meaningful insights. It will also have important flow-on implications to sports as they better understand their performance landscape, talent pools, and historical progressions.

**Pilot Analysis – Cycling**

Cycling was chosen as the first sport to conduct these analyses. Cycling is a tier 1 targeted sport and has potential for improvement in HP Athlete Development.

## Plan

*Gracenote* will serve as the initial and primary data source for this analysis. HPSNZ subscribe to a service that provides self-service access to global sport competition results. Missing in these results are round progressions such as heats, semi-finals, and qualifying rounds; however, competition outcomes (final results) are available for all sports dating back to the first Olympic Games in 1896. Competition results up to 2016 Rio Olympics will be used in the first instance. Future analysis may incorporate years 2017-2020 for more recent insights.

Junior World Championships results are available from 2006 and will be used to describe the pathway to Olympic medal.

As a starting point the 2020 Olympics cycling disciplines will be the primary focus. These are listed below. The omnium discipline is treated on an outcome basis where constituent races will not initially be analysed in detail.

* Omnium
* Team Sprint
* Team Pursuit
* Keirin
* Sprint

*Gracenote* data will be used to create a list of Olympic medallists. Pinnacle performance results for these medallists (of which some belong to a medal-winning team) will be used to indicate performance progression in years leading up to their Olympic Games medal. Pinnacle events are considered World Championships except in Olympic years, where this is the pinnacle event. The influence of the Commonwealth Games is clear, but at this stage the corresponding World Championships result will be used as pinnacle result.