INNOVATION EXCHANGE CHALLENGE

BOXING PROJECT:

INTRODUCTORY OUTLINE

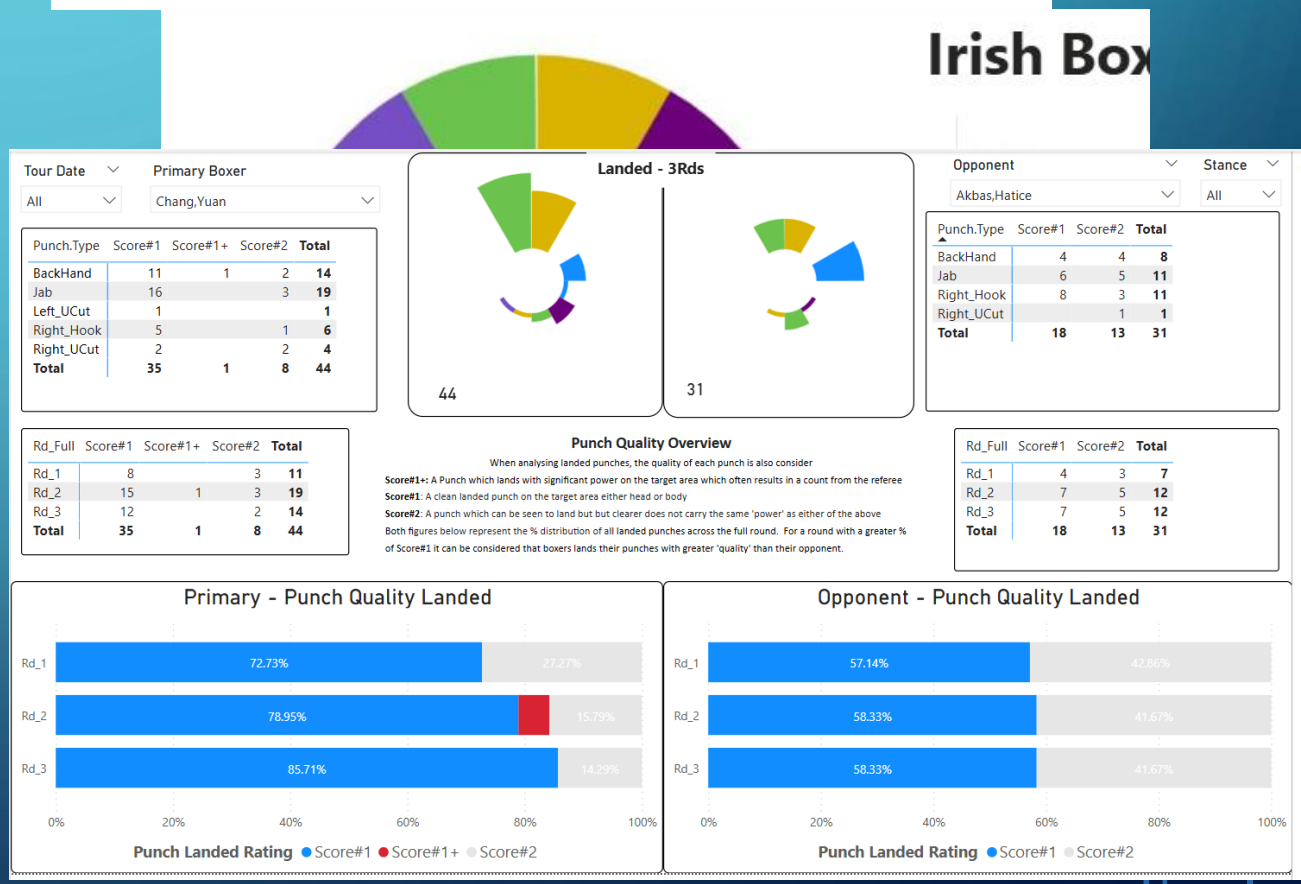
WHAT PROBLEM ARE WE TRYING TO SOLVE….

- Olympic boxing, 3x3 rounds is a combat sport where the round winner is assessed on a range of subjective criteria. Within the Irish Boxing High Performance program we use a bespoke analysis system to assess competitive performance.
- Through the advancement of computer vision/AI, a number of companies have emerged which provides assessment tools providing an in-depth analysis of boxing performance. Within the program we see significant opportunity in leverage these technologies to provide a more robust assessment of training and competitive performance. But what does the output really tell us? Of the many metrics outputted – which can we trust?
- The primary purpose is to use these tools to advance our understanding of training and competitive performance, adding a layer of depth and objectivity which isn't feasible to capture using conventional notational analysis. To develop a more robust assessment of external training load and to paint a clearer picture of how training intensity matches the demands of international competition

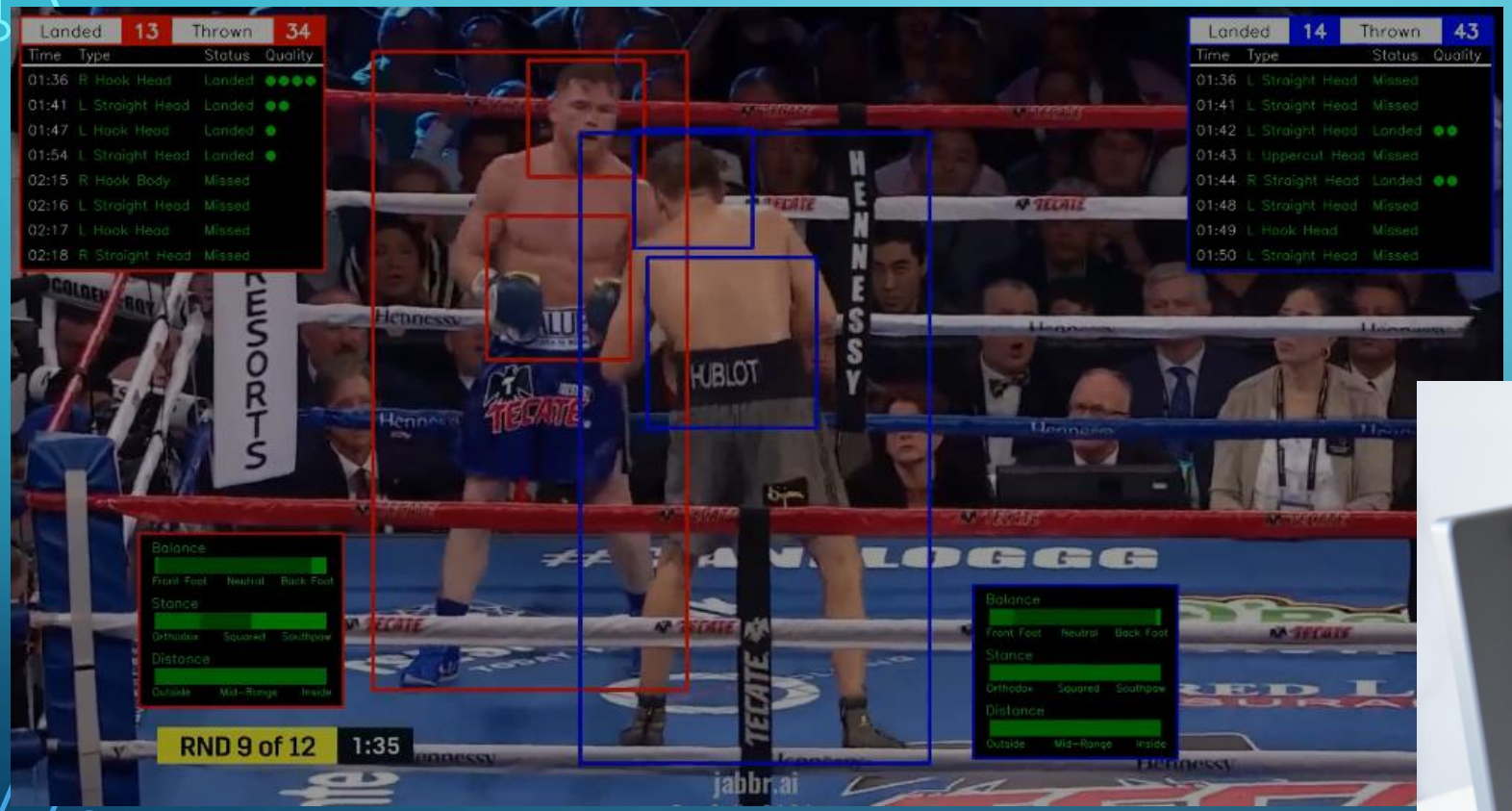
THE STARTING POINT

- What is currently in place & why?
  - Bout analysis tool in place
  - Post competition debrief primarily
    - Focus on IN competition performance evaluation

- What we don't know?
  - Within the Training environment
    - How many punches do they throw in the week?
    - Overall training Load – we have a picture but not the full picture

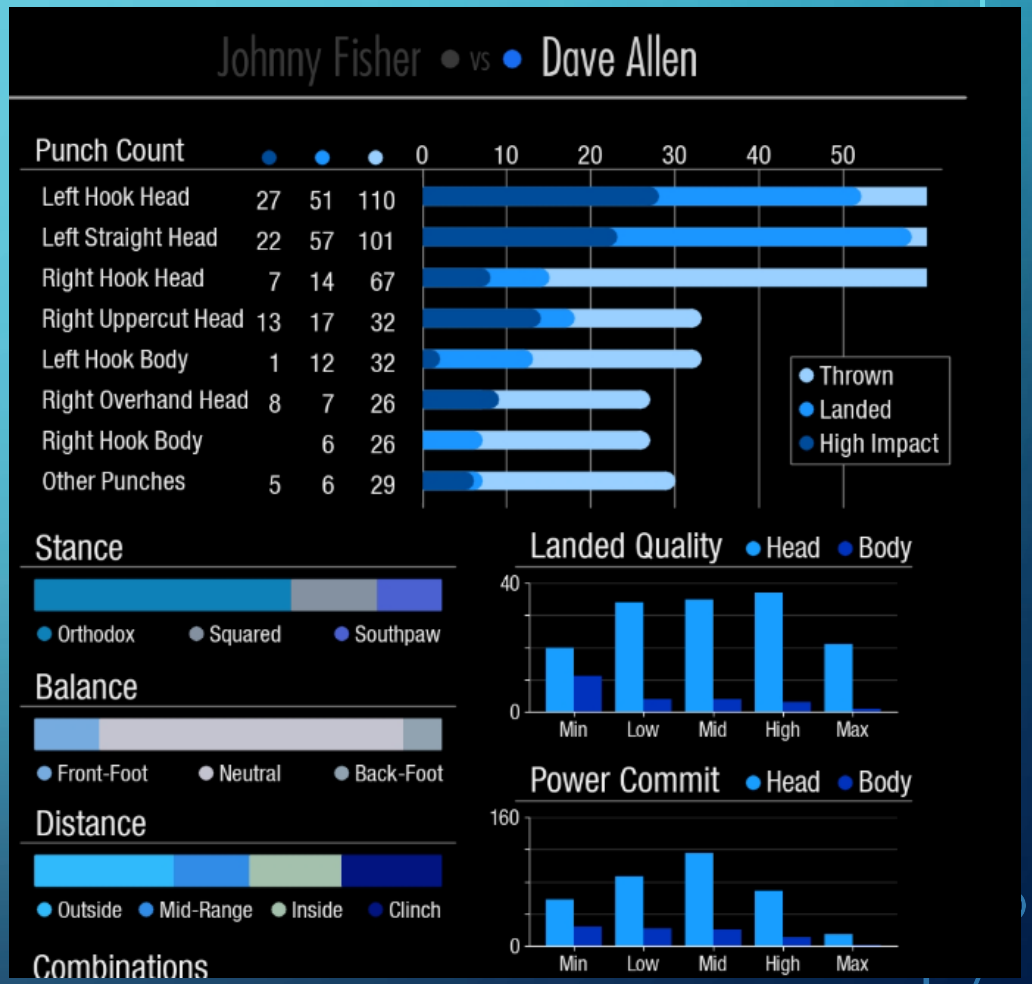


EMERGING TECHNOLOGY - JABBR



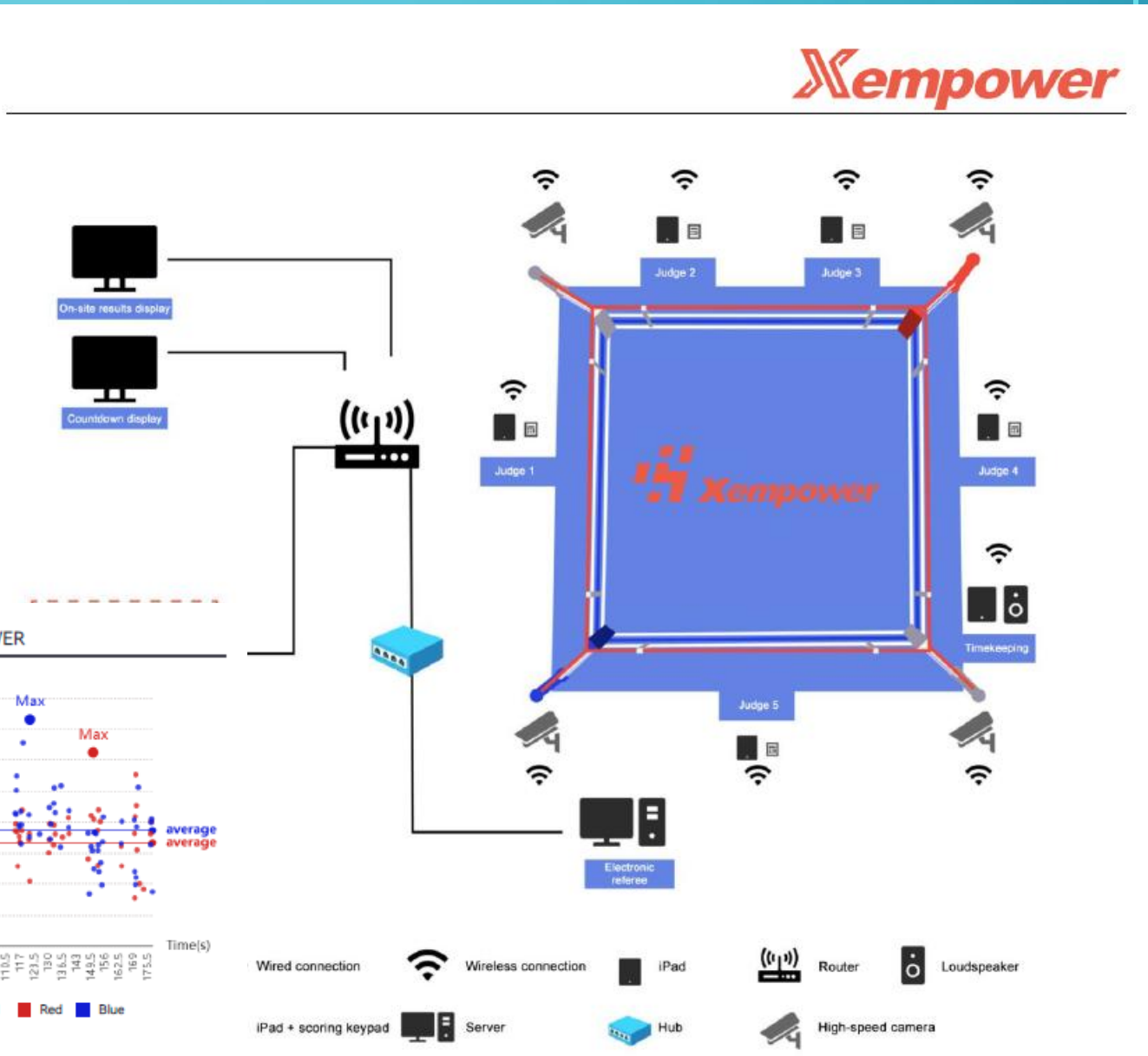
JABBR – WHAT DOES IT DO?

- The Product
  - Considered as a training tool
  - x12 metrics
    - Punches x8 –
      - Type
      - Outcome
      - Power – x6 categories
    - Pressure
    - Distance
    - Aggression
    - Balance
  - Automates report once video uploads
    - Pdf per bout
    - csv & json output



XEMPOWER

2025 [redacted] National Championships
Xempower
2025-12-11 18:00:00 / Evening Session
Youth / Male /165lbs (75kg)
Bout 9 / Round 1
GULF / [redacted]
VS
[redacted] / GA
TOTAL PUNCHES LANDED
Punch Thrown
111
108
Landed
14
28
Miss
97
80
Accuracy
12.6%
25.9%
Movement
50
50
OVERALL COMPARISON
Physical Ability
24.4%
25.6%
Power
48.0%
52.0%
Efficiency
10.0%
10.0%
Fist Speed
24.4%
25.6%
Proactivity
50.0%
50.0%
Avg Time Between Punches Thrown
Time(s)
3
PUNCHES THROWN
Punches Thrown(R)
Punches Thrown(L)
RING POSITION MAP (PUNCH COMPARISON)
DISTRIBUTION OF PUNCH POWER
KG
Max
Max
average
average
Time(s)
MAX =623.81
MAX =730.21
Red
Blue


Xempower
On-site results display
Countdown display
Judge 1
Judge 2
Judge 3
Judge 4
Judge 5
Timekeeping
Electronic referee
Wired connection
Wireless connection
iPad
Router
Loudspeaker
iPad + scoring keypad
Server
Hub
High-speed camera

OVERALL APPROACH

Phase 0: Internal Ideation & Scoping

-Why - Would we engage with this technology?

-What - Does it need to do?

-How - Would you use it?

Developing a Coaching tool – they drive the use & application

Phase 1: Jabbr - Phased Integration

Across each variable

-What makes sense to coaches?

-Can we validate objectively?

-Data management, reporting & sharing

Only utilise what we can trust

Phase 2: Integrated sensors

-Sensors in the gloves

Corner boxing tracker

Hysko punch tracker

PIQ Robot blue

-Heart rate

-Whoop, Aura etc.

Paint picture when away from HPU

Phase 3: Instrumented mouth guards

-Likely Medical focus

-Examine application across other sports

-Checks v both Human analyst!, Jabbr & Sensors in the gloves

WHERE WE ARE NOW

- Best case scenario
  - Jabbr v XemPower v Human!
  - 10-12 week trail
- Key pieces for successful trial
  - Validation v Us
    - Coach, Boxer & Analyst
      - Does the output make sense?
  - Data management & reporting
  - Proactive engagement with Tech providers
- What we don't know
  - How to protect our IP
  - Successful project delivery
    - Resource effectively to deliver desired outcome

- Desired Outcome
  - To have a usable system which we can trust in operation within the program in 2026
  - Not all metrics
    - Focus on Punches!
      - Total thrown
      - Outcome – Landed, Missed, Blocked