CASTLEPOINT
Information Command and Control

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INTRODUCTION

Castlepoint Systems welcomes the opportunity to provide input into the 2021/22 Australian Federal budget.

Extraordinary times call for innovative measures.

Castlepoint Systems is an Australian start-up and technology disrupter. We are focused on helping public and private organisation manage their data. We are also very motivated to use our technology to make a lasting and positive impact on the community in which we live.

Our company exists to change the way the world manages information so that people, communities, and companies are safer and smarter.

It is no secret that Australia has a regrettable track record in Domestic Violence. And while we in Australia are relatively fortunate in terms of ongoing impacts of Covid-19, the past 12 months has no doubt put undue pressure on an already dire situation for many women and children around the country.

Keeping women and children safe is something we would be very proud to contribute to. Improving outcomes for people at risk will also contribute to an improvement in Mental Health and the general well-being of Australians. We can achieve both with our technology.

These two areas – Domestic Violence and Mental Health – must remain a top priority for the government and community and deserve to be focused on in the upcoming Federal Budget.

Our proposal follows and lays out a simple request:

In an age where technology underpins almost everything we do, we urge the Australian Government to consider a federally funded program, delivered at the state level, to use AI technology to combat the unwelcome rise of violence against women and children, and the associated mental health issues that accompany such violence.

We believe this would also support Australian Policing to provide a unique and innovative approach to combating crime.

We thank you for the opportunity to contribute to the Australian Federal Budget for 2021-22.

ABOUT OUR COMPANY

Castlepoint Systems is a pioneering Australian RegTech which has invented the new paradigm for information management command and control: The Data Castle®.

Castlepoint is a single solution to manage all of the information in an organisation. It registers every record in every business system, and uses Artificial Intelligence to classify it against models, rules, and regulations, and apply appropriate lifecycle controls. It acts as a single pane of glass to find, relate, manage, and audit every record in a network, no matter what system it is stored in, and it does this without any impact on existing systems or user base, and without complex rules engines.

Castlepoint has many clients in Australia and overseas, predominately in Federal Government. Castlepoint has been proven by agencies to reduce effort for classification validation, cyber risk management, eDiscovery, identifying redundant items, and reporting and auditing, by between 96.7% and 99.8%. All IP is vested in our company.

WHY DOMESTIC VIOLENCE?

Domestic violence is a complex pattern of behaviours that may include, in addition to physical acts of violence, sexual abuse and emotional abuse, such as social isolation and financial deprivation.

We care deeply about the issue of domestic abuse. Domestic and family violence has a high cost to the community and economy, and consumes significant policing resources. Domestic abuse has catastrophic impacts on victims, and some perpetrators of domestic abuse are likely to escalate their behaviours into even more impactful (and resource-intensive) crimes such as serious assaults and homicide. Police sometimes fail to intervene in the patterns of abuse and coercive control that invariably precede these murders, often because they are not able to crosscheck and link important records showing perpetrator patterns.

Further, there is an intrinsic link between Domestic Violence and Mental Health. Having the ability to prevent domestic abuse will undoubtedly reduce the pressure on the Australian health system in caring for an increasing number of people affected, especially among women and children.

RECOMMENDATION SUMMARY

Fight domestic abuse in Australia by identifying perpetrator patterns using Artificial Intelligence (AI) technology

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Background

Domestic Abuse is a serious issue, and is complex to police and prevent. Responders often do not have access to all of the information available to identify patterns of abuse, and to intervene in those patterns. The information is recorded in disparate systems managed by disparate organisations, and if the information could all be linked and viewed together, incidents of domestic abuse could be prevented.

Prevention requires understanding perpetrators and their behaviour over time, but data to support this continuum approach is not readily available to officers.

Event Process Models of domestic violence perpetrators show that the history of incidents with their current partner are not the only indicators that should be assessed for an abuser. The family history of the perpetrator may be dysfunctional, with their parents often also perpetrators of neglect or abuse[1]. They may also have abused previous partners. It is vital to consider the full history of the perpetrator when making informed decisions about their risk. It is also important to consider other factors such as substance abuse, antisocial behaviour, high-risk affiliations such as gangs, and military or police service[2]. And in the Caledonian model 'systems approach', it is vital for police to also have an understanding of victims, rather than considering perpetrators in isolation[3].

In summary, it is essential to be able to access comprehensive, clustered data on a perpetrator, which may not all be in the core system. For police to be able to use their discretion to determine whether a perpetrator is posing an escalating risk, and to then intervene, they must have access to all relevant information.

Currently, to access this information, officers would need to interface with and search many different systems. They would then need to plot the incidents in these systems on a timeline to detect potential escalation. They would need to understand and extract relevant factors, from what may be a large amount of less relevant data. And they would need to understand what other relationships the perpetrator has had, and whether those individuals also had a history of relevant incidents or factors.

This is infeasible in most cases, which is almost certainly preventing officers from achieving optimal outcomes.

Innovative solutions

We propose an approach that will take existing, evidence-based, and operational models for identifying perpetrators, particularly high-risk perpetrators, and apply those models at scale, automatically. We can use innovative AI technology to read, relate, classify, and visualise relevant data from key systems into a single, graphical interface. The system can be a decision

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[1] Stairmand, Meg; Polaschek, Devon L. L.; Dixon, Louise (2019). *Perpetrators' Perspectives on Family Violence: An Event Process Model. Journal of Interpersonal Violence,* doi:10.1177/0886260519873440

[2] Safe and Together Model Practice Tool – Mapping Perpetrator Pattern (safeandtogetherinstitute.com) (accessed November 2020)

[3] Caledonian System Evaluation: Analysis of a programme for tackling domestic abuse in Scotland (www.gov.scot) (accessed November 2020)

support tool, not a determinative tool, and its source data and logic can be visible and easy to understand. The system would allow Police to use technology to complement their judgement and analysis of threat, risk, and harm.

AI can help to disrupt domestic abuse, and the harm it causes, using:

- a rules-as-code model for identifying perpetrator patterns and attributes
- visualisations showing perpetrator timelines, locations, relationships, and factors; and
- triggers and alerts to proactively inform officers of relevant facts.

THE RATIONALE

Multiple studies have shown that domestic abuse is often predictable, after the initial offence and even beforehand), per recent literature review by Robinson and Clancy (2020)[4]:

- domestic abuse perpetrators tend to possess criminal histories with multiple prior offences across a range of recorded crime types, and are more likely to have alcohol dependence
- those with a history of persistent violent offending over the life course are at increased risk of perpetrating domestic abuse and other violent crimes in later life
- where a crime is recorded, there is a higher probability that a perpetrator will go on to be involved in a second crime
- the 'intimate terrorism' form of abuse is usually perpetrated by a man within a general pattern of controlling and coercive behaviours
- perpetrators who commit more serious and numerous assaults are least likely to desist from offending over time
- the average time between incidents gets progressively shorter as the number of incidents increases.

Other studies have shown that escalating or recurring domestic abuse can also be preventable:

- the majority of harm is attributable to a small minority of perpetrators
- the 'violent resistance' form of assault, which occurs when a victim uses violence to defend herself, can be prevented if the victim is no longer exposed to attacks themselves.

There is a need to target intervention efforts towards those who perpetrate severe violence, as they are unlikely to 'naturally' desist from offending over time. Using AI to identify these 'power few', and focus on them in policing, is likely to have the most significant harm-reduction outcome.

While the probability of a further incident increases, and the time between incidents gets shorter, as the number of repeat incidents by a perpetrator rises, there is little variation in the average harm of each incident[5].

Because offenders generally do not escalate their abuse in terms of severity, police may be failing to intervene, as they do not intuitively see an imminent increased threat. Decision support from a tool that will identify and highlight the other risk factors in abuse, apart from the obvious signs of injury, may help overcome this potential bias. These patterns and attributes can be described in ontologies, which can be applied to data. Data matching the ontology can have a rule applied to it (e.g. to include or exclude it from the display; to flag it in some way; and/or to

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[4] Robinson, Amanda L; Clancy, Anna (2020). *Systematically identifying and prioritising domestic abuse perpetrators for targeted intervention.* Criminology & Criminal Justice, 174889582091438. doi:10.1177/1748895820914380
[5] Targeting Escalation of Intimate Partner Violence: Evidence from 52,000 Offenders | SpringerLink (accessed November 2020)

use it as a trigger for an alert). A rules-as-code approach can convert the evidence-based patterns, already used in policing via checklists, into algorithms.

The AI technology of Natural Language Processing and rules-as-code can work in any language (including with slang, dialect, and jargon), across any data format or system, in any cultural context, and with any type of rule (which can be policy, law, or best-practice based). Commencing with a simple approach of linking data sources together and visualising the results is a safe, low-impact, and testable model to introduce AI to Policing in Australia. Once proven, the approach can be scaled up and outwards, to address more types of crime. Later, the model can be adopted by other public sector bodies. This model can be used for any large-scale discovery and classification decision-support process in the Australian public sector.

INVESTMENT – INDICATIVE

We propose that this is a federally funded project, implemented at the State level. We recommend a pilot be initiated focusing on one State Police force to prove the concept. Similar pilots have been undertaken in the United Kingdom and have demonstrated their efficacy. It is possible to use sovereign AI technology to apply this model in Australia, at a low cost and low impact.

The technology to support this capability is currently available, proven in government, and is cost-effective to implement. The evidence-based patterns and models for detecting and disrupting domestic abuse are already available to police and other services.

We recommend allocation of $5M in the Budget to scope, plan, and implement these measures across State and Federal Police.

CONCLUSION

Castlepoint Systems is grateful for the opportunity to provide recommendations for the development of the 2021-2022 Commonwealth Budget.

We believe our recommendation provides a unique approach to a long-standing issue in our community. We exist to make the world a safer place and this is closely aligned to our purpose.

Domestic Violence in Australia is recognised as a serious problem and we hope that this proposal will be taken seriously and provide Australian Policing with an innovative way to access information across systems to keep women and children safe.

Thank you for your consideration,.

Rachael Greaves
CEO and Founder
Castlepoint Systems