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INTEGRATING TECHNOLOGY TO INCREASE GRADUATE EMPLOYABILITY SKILLS: A BLOCKCHAIN CASE STUDY IN PROPERTY LAW TEACHING

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I INTRODUCTION

Looking at the headlines in the professional literature of the legal profession—*The Australian's* Legal Affairs page, or *Lawyers Weekly*, as two examples—one would think that the legal profession has embraced new technologies across the board. While there is still talk of innovators, and discussion about 'new law' and new modes of practice, the tenor of such writing delivers a clear message that the legal profession operates in lockstep with the burgeoning of technologies in all other aspects of life.

The reality, however, is far closer to the patchy uptake of innovation that is inevitable in a paradigm shift. Kuhn himself observes about science that:

> [T]he first received paradigm is usually felt to account quite successfully for most of the observations…easily accessible to that [profession's] practitioners. Further development…ordinarily calls for the construction of elaborate equipment, the development of an esoteric vocabulary and skills, and a refinement of concepts that increasingly lessens their resemblance to their usual common -sense prototypes. That professionalisation leads, on the one hand, to an immense restriction of the scientist's vision and to a considerable resistance to paradigm change.[1]

Applied to the legal profession, the uptake by some—including to quite a sophisticated degree—of new technologies to reshape both the practice and the business of law demands a new language to describe

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[1] Thomas Kuhn, *The Structure of Scientific Revolutions* (University of Chicago Press, 2012) 64. The uneven uptake is borne out, for example, in media reports. See Emma Ryan, 'Digital Adoption and the Shake-up of Legal Practice' *Lawyers Weekly (*online*,* 10 November 2019) <https://www.lawyersweekly.com.au/biglaw/26878-digital-adoption-and-the-shake-up-of-legal-practice>.

its new digital contexts and new skills both to consider and to deploy the new technologies. But, as Kuhn points out, there will be resistance.

In the absence of more complete data about technology uptake in the profession,[2] it is difficult to assess the extent to which new technologies have permeated the very diverse modes of what has come to be known as the legal services industry. Indeed, in a recent paper, Webley et al observe multiple technology narratives in the law, none of which deliver a coherent message about the experience or expectations of the profession.[3] In a subsequent paper, the authors analyse the effects of those diverse narratives on legal education where the lack of coherence manifests in various curriculum innovations but little by way of coherent education in technologies.[4]

In light of the now explicit 'employment agenda' in government higher education policy[5]—that translates to an 'employability' agenda in universities[6]—the legal academy is faced with meeting the needs of its stakeholders, including in terms of graduates' digital capabilities, where those needs have not quite yet been fully articulated. As Galloway et al observe, this manifests in diverse approaches to teaching law about and with technologies that may or may not reflect the needs of the profession or society.[7]

In this paper, in contrast to elective or extra-curricular experiences that are emblematic of law schools' engagement with technologies,[8] we analyse the opportunity for a more deeply embedded approach to technology in the law curriculum. In particular, we are interested in explaining how legal theory and doctrine become the analytical tool by which to assess the impacts of new technology, and new technology, in turn, provides the context for understanding and applying the law.[9] We use a case study in legal reasoning to illustrate the means by which legal education might enhance both students' traditional legal analytical skills and their understanding of new technologies and their application. This adaptation of the widely adopted method of legal problem

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2 Note, however, the recent study of small to medium firms' uptake of technology: Lauren Joy Jones and Ashley Pearson, 'The Use of Technology by Gold Coast Legal Practitioners' (2020) 2(1) *Law Technology and Humans* 57.

3 Lisa Webley et al, 'The Profession(s) Engagements with Lawtech: Narratives and Archetypes of Future Law' (2019) 1(1) *Law, Technology and Humans 6,* 6-26.

4 Kate Galloway et al, 'The Legal Academy's Engagements with Lawtech: Technology Narratives and Archetypes as Drivers of Change' (2019) 1(1) *Law, Technology and Humans* 27 ('Lawtech').

5 Dan Tehan, 'The Future of Australian Universities Focuses on Achievement' (Media Release, Department of Education, Skills and employment, 2 October 2019) <https://ministers.dese.gov.au/tehan/future-australian-universities-focuses-achievement>.

6 As Bennett points out, 'employability' has been conflated with 'employment' in various narratives. Dawn Bennett, 'Graduate Employability and Higher Education: Past, Present and Future' (2018) 5 *HERDSA Review of Higher Education* 31.

7 Lawtech (n 4).

8 As described in, eg, ibid.

9 See, eg, Kate Galloway, 'A Rationale and Framework for Digital Literacies in Legal Education' (2017) 27(1) *Legal Education Review* 1 ('Digital Literacies').

solving[10] might answer the demand for graduates skilled both in the law and who are digitally capable.

To make the case for integrating digital contexts into an enhanced approach to legal problem solving, we first establish what is known about the demand for technological capability in legal practice, against the imperative for law schools of building graduate employability. We then scope the doctrinal bounds of legal education, and how doctrine itself provides the opportunity to embed learning about technologies through an adaptation of the benchmark method of legal problem solving. Finally, we present a case study of our own recent work, analysing the potential for blockchain to support fractionalised land titles alongside the Torrens register. We adapt the purpose of this standalone analysis, to show how such an approach might bring to legal education the broader contexts of technology as a means of understanding both doctrine and technology. In doing so, we suggest, graduates will be more capable of providing legal services involving technologies, with benefits for employability.

II A TECHNOLOGY-DRIVEN EMPLOYMENT LANDSCAPE

A *The Demand for Technology Know-how*

Law graduates currently face unprecedented challenges in a constantly evolving workplace. From a practice perspective, there has been a noticeable shift in expectations placed on law graduates when they enter the profession. Apart from the traditional skills associated with the legal profession, such as communication, problem solving and legal writing skills, the use of technology has raised a number of nascent areas not contemplated in legal education until fairly recently.[11]

The expectation of enhanced technology skills is not only relevant to the *way* in which law is practised today. Graduate lawyers also need to be able to deal with areas of the law where technology has impacted on *substantive law*, for example in contract law, where click-wrap contracts are increasingly being used on multiple online platforms and the acceptance of complex licencing agreements are mandatory when purchasing digital books or making use of streaming services. There are

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[10] Kelley Burton, 'Teaching and Assessing Problem: An Example of an Incremental Approach to Using IRAC in Legal Education' (2016) 13(5) *Journal of University Teaching & Learning Practice* 20; Kelley Burton, '"Think Like a Lawyer" Using a Legal Reasoning Grid and Criterion-Referenced Assessment Rubric on IRAC (Issue, Rule, Application, Conclusion)' (2017) 10(2) *Journal of Learning Design* 57; Alex Steel et al, 'Critical Legal Reading: The Elements, Strategies and Dispositions Needed to Master this Essential Skill' (2016) 26 *Legal Education Review* 187.

[11] Law Society of New South Wales, *Future of Law and Innovation in the Profession* (Commission of Inquiry Report, 2017) 7 ('*Future of Law and Innovation in the Profession*'); Francina Cantatore, 'New Frontiers in Clinical Legal Education: Harnessing Technology to Prepare Students for Practice and Facilitate Access to Justice' (2019) 5(1) *Australian Journal of Clinical Education*, *<https://ajce.scholasticahq.com/article/11191-new-frontiers-in-clinical-legal-education-harnessing-technology-to-prepare-students-for-practice-and-facilitate-access-to-justicee>* ('New Frontiers').

also challenges inherent in the overlap of regulation where one digital device such as an iPhone may accommodate several types of technology at the same time (for example telecommunications services, digital platforms, and location services) which are all subject to different regulatory frameworks, and in some instances, self-regulation. Digital platforms, in particular, present legal challenges in respect of issues such as privacy, defamation and intellectual property rights—issues ubiquitous in our lives, yet largely absent from the core law curriculum.

It is now widely recognised that it is imperative for technology skills to be included in professional development programs and legal training for both practising lawyers and law students.[12] Notably, there is an expectation for lawyers to 'be ready to use or learn how to use technology on day one' once they start practising law.[13] It has also been advocated that a better understanding of software and online systems will equip law graduates with a basis for their future roles as legal professionals, to provide quality advice and service to their clients.[14]

Susskind et al[15] have identified four trends that currently affect most professions, including law, namely: the move from bespoke service, the bypassing of traditional gatekeepers, a shift from reactive to a proactive approach to professional work and the 'more-for-less' challenge.[16] For example, legal services are increasingly being outsourced, and traditional law firms are required to rethink delivery strategies to compete with online legal services delivery.[17] Although it may be argued that legal professionals have been dealing with these developments and challenges for some time now, many law firms have not adopted clear strategies to meet these trends,[18] and continue to grapple with the changes brought about by technology. It also means that there are often increased expectations on new lawyers to adapt quickly and to show a willingness to transition from traditional workplace practices to innovative, and sometimes complex processes. There is also a growing need for graduate lawyers to display 'sufficient technical competence' when interacting with the Courts.[19]

By way of example of rapid innovation, a current international trend is the application of statistical analysis to law, referred to as 'moneyball law'.[20] This practice involves the mining of previously unavailable litigation data to be used for predictive purposes by deploying big data

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12 Camille Broussard et al, 'Teaching Legal Technology: A Critical Conversation on Legal Technology Skills and Training' (2017) 21(4) *AALL Spectrum* 22, 23.

13 Ibid.

14 Ibid.

15 Richard Susskind and Daniel Susskind, *The Future of the Professions: How Technology Will Transform the Work of Human Experts* (Oxford University Press, 2015).

16 Ibid, in Michael Williams, '"Moneyball for Lawyers": How Technology will Change the Practice of Law' (2016) 38(5) *Bulletin (Law Society of South Australia)* 14, 14.

17 Ibid.

18 Ibid.

19 Ibid.

20 Williams (n 16) 14-15. This term was named after the American film "Moneyball" in which a baseball coach used historical player data to inform the player draft.

technologies.[21] Lawyers may also in the future use technology that includes virtual processes inside and outside of Court, which could include advanced data analytics, augmented reality displays and virtual Court appearances.[22] It seems evident that law graduates entering legal practice would benefit from being familiar with these concepts and practices and the means of adapting their knowledge to engage usefully with emergent technologies.

It has also been recognised that clients are requiring more value for money in respect of legal services and that there is an expectation for lawyers to use technology and be competent technology users.[23] Furthermore, large in-house practices are also driving change through streamlining work processes, by using workflow technology, seeking and using improved legal technology, and rewarding client-centred services.[24] In this context, they are driven by clients' needs and expectations, which translate into increased skills requirements from law graduates entering the profession. The FLiP Report further notes that in-house legal practices are using technology to provide a more efficient and cost-effective service in their companies, including 'sophisticated workflow systems… [and various] dedicated legal applications'.[25] For example, the Hewlett Packard Enterprise legal team uses 'around 30 bespoke legal apps supporting a wide variety of work, including mergers and acquisitions, contract negation, litigation, e-billing and digital signatures'.[26]

The importance of these competencies has been acknowledged by regulators of the profession, as evidenced by the inclusion of technology-related activities in the mandatory Continuing Professional Development (CPD) requirements of all Australian Law Societies.[27] For example, the Queensland Law Society, Law Institute of Victoria, Australian Capital Territory Law Society, Law Society Northern Territory and Law Society of New South Wales all include 'effective use of technology' on their list of 'Practice Management and Business Skills' activities.[28] Similarly, the Law Society of South Australia

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21 Ibid 15.

22 Ibid 15.

23 *Future of Law and Innovation in the Profession* (n 11) 5.

24 Ibid. See, for example, file management systems such as Lawcadia, used by in-house counsel; 'Transforming Legal: Lawcadia Homepage', *Lawcadia* (Website) <https://www.lawcadia.com/>.

25 Ibid 20.

26 Ibid.

27 New Frontiers (n 11).

28 See 'CPD Rules And Policies', *Queensland Law Society* (Webpage, 2019) <https://www.qls.com.au/For_the_profession/Your_legal_career/Continuing_professional_development_CPD/CPD_rules_policies> ('CPD Rules and Policies'); 'Legal Compliance: CPD compulsory fields', *Law Institute Victoria* (Webpage, 2019) <https://www.liv.asn.au/Professional-Practice/Compliance/CPD-Compliance/CPD-requirements---FAQs/CPD-compulsory-fields> ('Legal Compliance: CPD Compulsory Fields'); 'CPD Guidelines: A continuing professional development scheme for Canberra's legal practitioners', *ACT Law Society* (Webpage, 6 November 2018) <https://www.actlawsociety.asn.au/practising-law/cpd/cpd-guidelines> ('CPD Guidelines: A continuing professional development scheme for Canberra's legal practitioners'); Law Society Northern Territory, *Non-Exhaustive List of Core Compulsory Competencies* (Profession Guidelines, 7 June 2018)

includes technology as a component of its CPD program within its 'Practice Management and Business Skills' and 'Professional Skills' units. [29] The Legal Practice Board of Western Australia lists 'Applications of technology', 'eDiscovery' and 'eConveyancing' under their proposed practice management activities. [30] Lastly, the Law Society of Tasmania includes 'effective use of technology' under its 'Practice Management and Business Skills' category and additionally lists 'ethics within a technical legal context' under the 'Ethics' core area. [31] The need for ongoing up-skilling in technology proficiency indicates that this has become an important focal area of the profession and, by implication, a desirable graduate employability skill.

B *Adapting Graduate Employability Skills*

A widely-accepted definition of graduate employability is the achievement of 'the skills, understandings and personal attributes that make an individual more likely to secure employment and be successful in their chosen occupations to the benefit of themselves, the workforce, the community and the economy.' [32] There is also significant agreement on the broad categories of desirable graduate capabilities cited by institutions, employers, and industry bodies, including what are often referred to as the 'generic' or 'soft' skills, such as communication skills, teamwork, critical thinking, problem-solving, self-management, digital literacy and global citizenship.[33] Oliver et al relied on seven clusters of

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<https://lawsocietynt.asn.au/images/stories/cpd_pdfs/r0202-d-list-of-core-compulsory-competencies-v2-00.pdf> ('*Non-Exhaustive List of Core Compulsory Competencies*'); Law Society of New South Wales, *Legal Profession Uniform Continuing Professional Development (Solicitors) Rules 2015* (Profession Guidelines) <https://www.lawsociety.com.au/sites/default/files/2018-03/CPD%20rules.pdf> ('*Legal Profession Uniform Continuing Professional Development (Solicitors) Rules 2015*').

29 See 'Mandatory Continuing Professional Development', *Law Society of South Australia* (Webpage) <https://www.lawsocietysa.asn.au/Public/Lawyers/Professional_Development/Mandatory_CPD.aspx>.

30 Legal Practice Board of Western Australia, *Guidelines for the Allocation of Topics to CPD Competency Areas* (Profession Guidelines, June 2019) <https://www.lpbwa.org.au/Documents/Legal-Profession/Continuing-Professional-Development/CPD-Guidelines/GUIDELINES-FOR-THE-ALLOCATION-OF-TOPICS-TO-CPD-COM.aspx>.

31 Law Society of Tasmania, *CPD Schemes: A Model for Australian Lawyers* (CPD Guidelines, 12 November 2013) <https://lst.org.au/wp-content/uploads/2014/05/NationalCPDGuidelines-Example-Topics-Core-Areas.pdf>.

32 Mantz Yorke, *Employability in Higher Education: What it is - What it is not*. (Learning and Employability Series, April 2006) <http://www.employability.ed.ac.uk/documents/Staff/HEA-Employability_in_HE(Is,IsNot).pdf>.

33 Stefan Hajkowicz et al, *Tomorrow's Digitally Enabled Workforce: Megatrends and Scenarios for Jobs and Employment in Australia over the Coming Twenty Years* (Report, 2016) <http://www.csiro.au/~/media/D61/Files/16-0026_DATA61_REPORT_TomorrowsDigiallyEnabledWorkforce_WEB_160204.pdf>; Trina Jorre de St Jorre and Beverley Oliver, 'Want Students to Engage? Contextualise Graduate Learning Outcomes and Assess for Employability' (2017) 37(1) *Higher Education Research & Development* 44, 44-58.

attributes identified by universities including: written and oral communication; critical and analytical (and sometimes creative and reflective) thinking; problem-solving (including generating ideas and innovative solutions); information literacy, often associated with technology; learning and working independently; learning and working collaboratively; and ethical and inclusive engagement with communities, cultures and nations.[34] Given the need for law schools to prepare law students for practice, it is incumbent upon law programs to provide law students with opportunities to inculcate these skills through the lens of future employment expectancies.[35]

In addition to 'traditional' graduate employability skills, the FLiP Report identified skills and knowledge in the following burgeoning areas as likely to be of importance in the future: technology; practice-related skills (eg collaboration, advocacy, negotiation skills); business skills/basic accounting and finance; project management; international cross-border law; interdisciplinary experience; and resilience, flexibility and ability to adapt to change.[36] As noted above, the various Australian Law Societies have noted this trend by incorporating technology related components into CPD categories;[37] however, there has been a lack of uniform incorporation of technology-based education in law schools.[38]

Although disruptive innovation is advocated as a solution for the problems that plague educational institutions[39] and legal systems,[40] it may be argued that the inclusion of technology in the legal profession and legal education is at present uneven and superficial. The traditional doctrinal approach reflects the prescribed academic areas of knowledge required for admission to the legal profession in line with the Law Council requirements, [41] and the practical legal training (PLT)

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34 Beverley Oliver et al, 'Introducing the Graduate Employability Indicators', *Assuring Graduate Capabilities* (Report, 2011) <http://www.assuringgraduatecapabilities.com/uploads/4/5/0/5/45053363/introducingthegei.pdf>.

35 Francina Cantatore, 'The Impact of Pro Bono Law Clinics on Employability and Work-readiness in Law Students' (2018) 25(1) *International Journal of Clinical Legal Education,* 147 ('Pro Bono Law Clinics'); New Frontiers (n 11).

36 *Future of Law and Innovation in the Profession* (n 11) 7.

37 CPD Rules And Policies (n 28); Legal Compliance: CPD Compulsory Fields (n 28); 'CPD Guidelines: A continuing professional development scheme for Canberra's legal practitioners' (n 28); *Non-Exhaustive List of Core Compulsory Competencies* (n 28); *Legal Profession Uniform Continuing Professional Development (Solicitors) Rules 2015* (n 28).

38 See for example New Frontiers (n 11).

39 Henry Eyring and Clayton Christensen, *The Innovative University: Changing the DNA of Higher Education from the Inside Out* (Josey Bass, 1st ed, 2011).

40 Michele R Pistone, Michael B Horn, 'Disrupting Law School: How Disruptive Innovation will Revolutionize the Legal World', *Clayton Christensen Institute for Disruptive Innovation* (PDF, 15 March 2016) <https://www.christenseninstitute.org/publications/disrupting-law-school/>.

41 See Law Admissions Consultative Committee, *Prescribed academic areas of knowledge* (PDF, No AUSTRALIA\SDCL\249520754.02, December 2016) <https://www.lawcouncil.asn.au/files/web-pdf/LACC%20docs/249520754_2_LACC%20-%20Prescribed%20Academic%20Areas%20of%20Knowledge%20%28Revised%20December%202016%29.pdf>.

competency standards[42] for entry-level lawyers.[43] This approach, in many respects, fails to reflect the evolving nature of the workplace. The increased technology proficiencies expected from law graduates is entirely absent from these core areas of knowledge and practice. It begs the need for law schools to take a more robust approach in incorporating technology and technology-based components into existing law courses.

III INTEGRATING TECHNOLOGY AND DOCTRINE

Regardless of the perspective from which Australian legal education is examined, it is difficult to escape the impact of the Priestley 11 core doctrinal subjects.[44] Australian degree programs are organised around these doctrinal fields that are entrenched as the coherent body of discipline knowledge emblematic of the moniker of a member of the profession.[45] Broad acceptance of the core substance of the key doctrinal fields, reflected in a relatively consistent structure of most leading texts in a field, inevitably reinforces and is reinforced by the doctrinal canon of legal education.

There is an apparent conflict between the integrated and widely-accepted doctrinal approach of the Priestley 11, and fairly longstanding calls for a more diversified law curriculum[46]—including, most recently, the expanded set of skills regarded as essential for graduate employability.[47] This is emblematic of the long-term trends in Australian legal education, vacillating between an emphasis on academic doctrine, and professional skills.[48] Backer helpfully describes 'parallel streams' taken by legal education in the US in response to a similar conflict:

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42 Law Admissions Consultative Committee, 'Practical Legal Training Competency Standards For Entry-Level Lawyers' *Law Admissions Consultative Committee* (PDF, 1 January 2015) <https://www.lawcouncil.asn.au/files/web-pdf/LACC%20docs/224336988_10_LACC%20-%20PLT.pdf>.

43 Embodied in each jurisdiction's academic requirements for admission to practise. See, eg, *Admission Guidelines No 1 of 2016* issued under Rule 9AA of the *Supreme Court (Admission) Rules 2004* (Qld).

44 Ibid.

45 Representing Threshold Learning Outcome 1 in Sally Kift, Mark Israel and Rachael Field, 'Bachelor of Laws Learning and Teaching Academic Standards Statement', *Australian Learning and Teaching Council* (PDF, December 2010) <https://cald.asn.au/wp-content/uploads/2017/11/KiftetalLTASStandardsStatement2010.pdf>.

46 See, eg, Mary Keyes and Richard Johnstone, 'Changing Legal Education: Rhetoric, Realty, and Prospects for the Future' (2004) 26 *Sydney Law Rev*iew 537; Margaret Thornton, 'Dreaming of Diversity in Legal Education' in Ron Levy et al (eds) *New Directions for Law in Australia: Essays in Contemporary Law Reform* (ANU Press, 2017) 549; Irene Watson and Marcelle Burns, 'Indigenous Knowledges: A Strategy for First Nations Peoples Engagement in Higher Education' in Sally Varnham, Patty Kamvounias and Joan Squelch (eds), *Higher Education and the Law* (Federation Press, 2015) 41.

47 Such as those enumerated in the FLiP Report: *Future of Law and Innovation in the Profession* (n 11) 7.

48 See also, eg, 'The Griffith Law Curriculum' (1992) 1(1) *Griffith Law Review* 8, 9; Nickolas James, 'A Brief History of Critique in Australian Legal Education' (2000) 24(3) *Melbourne University Law Review* 965.

> … [T]wo great movements in legal education have been gaining momentum and legitimacy within the legal academy. On the one hand there is the century long dialogue of the nature of legal education and its connection to bench and bar... On the other hand there is the half-century long search for the expansion of the core areas of law that ought to form part of the basic instruction in … law schools, and in the practice of bench and bar. But these two great movements have been developing in parallel streams. [49]

Yet despite the enhanced list of work-ready skills, the profession remains concerned with the ability of law graduates to solve legal problems within the accepted canon of doctrine. This is a nod to tradition, and to the importance of understanding law as a system rather than a focus on individual laws themselves. There is no indication that this foundation will be overturned any time soon.[50]

We suggest, however, that there is no need to engage in debates about what substantive law *should* comprise the law curriculum. Rather, the question for legal education, is how to design a curriculum that embeds not only the traditional doctrinal content and its case method means of instruction, but also teaches what we describe as future-focused skills—skills that are ostensibly different from those of the knowledge and (traditional) practice of the law. Further, and importantly in light of the employability agenda, the question is how to do so in such a way as to develop graduate capabilities relevant to employment. In Backer's terms, this is bringing the 'parallel streams' together.

We suggest two complementary adjustments that together would maintain the tradition currently driving the core law curriculum, while also developing additional graduate capabilities. These are a curriculum integrated with digital contexts, and an enhanced approach to legal problem-solving.

A *Redesigning Doctrinal Curriculum for Digital Contexts*

A common response of educators faced with demand to include more in curriculum, is that there is no room. The 'crowded curriculum' is a real danger for educator and student alike.[51] The pressure of adding more is felt keenly in the contemporary law curriculum, where the pressure to compete amongst Australia's 40 law schools has led to consolidation of core subjects, shorter terms, the rise of the trimester,

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[49] Larry Catá Backer, 'Parallel Tracks?: Internationalizing the American Law School Curriculum in Light of the Principles in the Carnegie Foundation's *Educating Lawyers*' (2008) 3 *Comparative Perspectives on Law and Justice* 101, 109.

[50] Andrew Henderson, 'What Happened to the New Priestley 11?' *The Mermaid's Purse* (Online, 10 March 2021) <https://the-mermaids-purse.blog/2021/03/10/what-happened-to-the-new-priestley-11/>.

[51] Described in, eg, John Biggs, 'Corporatised Universities: An Educational and Cultural Disaster' in John Biggs and Richard Davis (ed), *The Subversion of Australian Universities* (Fund for Educational Dissent, 2002) 184; Gerald Dawe, Rolf Jucker and Stephen Martin, *Sustainable Development in Higher Education: Current Practice and Future Developments* (Report to the Higher Education Academy, November 2005) <https://www.heacademy.ac.uk/system/files/sustdevinHEfinalreport.pdf >.

and law degrees that can now be completed in three years or sometimes less.[52] Somehow, students are still expected to learn the same 'amount' of doctrine as was taught in a far less compressed degree program.

While there is an argument for law students to learn more, and in more depth, about new technologies,[53] the law degree is not the place for that type of learning.[54] Adopting this approach will remove the pressure of adding more 'content' to the already stretched degree. Instead of additional substantive work, law students might be educated about new technologies and the law through treating technologies as a 'broader context' of the law.[55] To do so opens a number of possibilities for curriculum design using models aimed at embedding diverse contexts and skills without displacing an emphasis on the core discipline inquiry.[56]

Martin, for example, describes three curriculum frameworks designed to educate about First Nations peoples' experiences and perspectives.[57] The first, 'incorporating' First Nations' perspectives, uses current examples to illustrate curriculum content. This is a relatively unstructured approach. The second, 'embedding' perspectives, involves the more transparent design feature of a learning outcome and aligned assessment. This format is likely to lend itself more to curriculum mapping, ensuring program learning outcomes—

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52 See, eg, Council of Australian Law Deans, 'The CALD Standards for Australian Law Schools' (2013) <https://cald.asn.au/wp-content/uploads/2017/11/CALD-Standards-As-adopted-17-November-2009-and-Amended-to-March-2013-1.pdf>. The CALD Standards provide for a minimum three years, or six semesters, of full-time study: clause 2.4.

53 The professional literature, in particular, is replete with calls for law students to learn to code if they want to get a job. See, eg: Adam K H, 'Five Reasons How Lawyers and Aspiring Lawyers Could Benefit from Learning How to Code', *The Coding Lawyer* (Online, 15 June 2020) <https://www.thecodinglawyer.com/why-coding-for-lawyers/>; 'To Code or Not to Code: Should Lawyers Learn to Code?', *Lawtomated* (Web Page, 20 July 2019) <https://lawtomated.com/to-code-or-not-to-code-should-lawyers-learn-to-code-3-2/>; Olga V Mack, 'To Code Or Not To Code: A Legal Skill Question', *Above the Law* (Web Page, 22 July 2020) <https://abovethelaw.com/2020/06/to-code-or-not-to-code-a-legal-skill-question/>.

54 See, eg, Alexander Smith and Nigel Spencer, 'Do Lawyers Need to Learn to Code?' in Catrina Denvir (ed), *Modernizing Legal Education* (Cambridge University Press, 2020) 18.

55 Kift, Israel and Field (n 45); Digital Literacies (n 9).

56 See eg Kate Galloway, 'Refreshed in the Tropics: Developing Curriculum Using a Thematic Lens' (2011) 4(1&2) *Journal of the Australasian Law Teachers Association* 119; Duncan Bentley and Joan Squelch, *Internationalising the Australian Law Curriculum for Enhanced Global Legal Education and Practice* (Final Report, 2012) <http://www.olt.gov.au/project-internationalising-australian-law-curriculum-enhanced-global-legal-education-and-practice-20>; Kate Galloway, 'Indigenous Contexts in the Law Curriculum: Process and Structure' (2018) 28(2) *Legal Education Review* 1; Digital Literacies (n 9).

57 Karen Martin, 'Aboriginal Worldview, Knowledge and Relatedness: Re-conceptualising Aboriginal Studies as a Teaching-Learning and Research Interface' (2009) 12(1-4) *Journal of Australian Indigenous Issues* 66. See also Karen Martin, Meg O'Reilly and Adele Wessel, *Making it Matter: A Framework for Embedding Aboriginal Perspectives and Evaluation of the Pedagogical Approaches by Staff in School of Education Units* (unpublished Report on Vice Chancellor's Fellowship Southern Cross University).

although both would provide evidence of assurance of learning.[58] The third she describes as 'Indigenous studies'. This is a standalone immersion subject on the topic at hand. In any case, Martin argues for infusing First Nations perspectives into the program as a whole, through scaffolding and alignment.

Similarly, in the context of ethics and professional responsibility, Robertson presents the case for a vertically aligned program that scaffolds development of the requisite skills and knowledge.[59] In a program-wide example of this approach, the Griffith Law School's original doctrinally-grounded curriculum embedded contemporary issues, critical perspectives, and legal skills.[60]

Reflecting Martin's curriculum frameworks, in the context of internationalising the law curriculum, Backer, too, outlines three different approaches that work with an existing law curriculum: integration, aggregation, and segregation.[61] Like Martin's incorporating and embedding, 'integration' implies a program-wide approach to engaging with broader contexts—in Backer's case, internationalisation—within the otherwise standard doctrinal offerings. Aggregation approximates Martin's 'Indigenous studies': a standalone subject dealing specifically with the context at hand. By contrast, segregation develops an institutional 'home' for the relevant topic. This might take the form of a dedicated centre, for example.

Importantly, although these design approaches are introduced with very specific contexts in mind, they might be applied to any curricular 'lens', including that of the work-ready skills described in the FLiP Report (more generally), and the more specific skill of digital capability.[62] JISC, a not-for-profit advising the higher education sector on digital capabilities, identifies individual capabilities as including six elements that might be learned through a number of 'core activities'.[63] In view of the breadth of the component skills of digital capability and the contexts of technologies, a program learning goal of digital capability would demand an overarching educational experience, ie a program-wide approach rather than an aggregated approach. We suggest that it is the program-wide curriculum that must be deployed to offer sufficient learning experiences to equip graduates with future-focused skills.

Martin's embedding, or the integration approach described by Backer is most relevant to our proposal here, to address an 'orientation'

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58 Romy Lawson et al, 'Hunting and Gathering: New Imperatives in Mapping and Collecting Student Learning Data to Assure Quality Outcomes' (2015) 34(3) *Higher Education Research & Development* 581.

59 Michael Robertson, 'Renewing a Focus on Ethics in Legal Education?' (Conference Paper, Australian Lawyers and Social Change Conference, 22–24 September 2004).

60 *The Griffith Law Curriculum* (n 8).

61 The other two, immersion and multidisciplinary departmental models, relate specifically to the theme of internationalisation and are outside the scope of this article.

62 For a full discussion of the scope of digital capabilities, see, eg, JISC, 'Building Digital Capability' <https://www.digitalcapability.jisc.ac.uk/>.

63 JISC 'What is Digital Capability?' < https://www.digitalcapability.jisc.ac.uk/what-is-digital-capability/>.

or a 'perspective [that] is foundational, rather than peripheral, to legal inquiry'.[64] To that end, rather than an aggregated or 'studies' approach dealing with the law and new technologies—canvassing, for example, subject areas like cyber-crime or e-commerce—we suggest a contextual approach to existing core doctrinal fields. Understanding the need for a program-wide contextual approach, the question is how to integrate technologies into the existing curriculum. One way of doing so is to deploy the skill of legal problem solving.

B *Expanding the Scope of Legal Method*

It is perhaps trite to observe the well-trodden assertion that the purpose of legal education is to inculcate the skill of thinking like a lawyer.[65] Generally, this skill—whose meaning is acknowledged as somewhat ambiguous[66]—involves students engaging in legal problem solving through a systematic approach applied to hypothetical case scenarios. Despite a reported increase in diversity of assessment tasks in legal education,[67] the hypothetical scenario remains the benchmark for learning and practising legal problem solving. The IRAC or MIRAT method can be found in most law schools—or one of a myriad of other formulations of a structured approach to solving a legal problem.[68]

While there is significant critique of the utility of IRAC as the sole method of legal problem-solving, and advocacy of various alternatives,[69] the focus of legal education remains largely on teaching students how to solve hypothetical legal disputes. This article does not deny the benefits of structure in teaching legal problem solving, or the benefits of using hypothetical scenarios as a means of practising the application of the law. Our purpose, instead, is to challenge the primacy

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64 Backer (n 9) 131.

65 See, eg, Kate Galloway et al, 'Working the Nexus: Teaching Students to Think, Read and Problem-solve like a Lawyer' (2016) 26(1) *Legal Education Review* 95; Carrie Menkel-Meadow, 'Thinking or Acting Like A Lawyer? What We Don't Know About Legal Education and are Afraid to Ask' in Ben Golder et al (eds), *The State of Legal Education Research: Then and Now and Tomorrow* (Routledge, 2019) 223.

66 See, eg, John O Mudd, 'Thinking Critically About" Thinking Like a Lawyer"' (1983) 33(4) *Journal of Legal Education* 704; David T ButleRitchie, 'Situating Thinking like a Lawyer within Legal Pedagogy' (2002-2003) 50(1) *Cleveland State Law Review* 29.

67 Richard Johnstone and Swnitra Vignaendra, 'Learning Outcomes and Curriculum Development in Law: A Report Commissioned by the Australian Universities Teaching Committee' (Report No 0642773424, January 2003); Richard Johnstone and Swnitra Vignaendra, 'Learning Outcomes and Curriculum Development in Law' (2004) 12(3) Legal Education Digest 11; Kate Galloway, Penny Carruthers and Natalie Skead, 'Assessment in the Law School: Contemporary Approaches of Australian Property Law Teachers' (2012) 5(1&2) *Journal of the Australasian Law Teachers Association* 231.

68 While acknowledging its status as other than a scholarly source, Wikipedia helpfully lists some 23 additional problem-solving methods. 'IRAC', *Wikipedia* (28 October 2020) <https://en.wikipedia.org/wiki/IRAC>.

69 See, eg, Lucille A Jewel, 'Silencing Discipline in Legal Education' (2018) 49(3) *University of Toledo Law Review* 657; Carrie Menkel-Meadow and Andrea Kupfer, *Negotiation: Processes for Problem Solving* (Wolters Kluwer, 3rd ed, 2020); Cynthia A Wei et al, 'A Framework for Teaching Socio-environmental Problem-solving' (2020) 10(1) *Journal of Environmental Studies and Sciences* 1.

of hypothetical problems as the means of teaching law and its application, and to pose an alternative that might usefully integrate diverse contexts and skills into the law curriculum where hypotheticals cannot. Indeed, there are several reasons why the dominant approach to legal problem-solving itself has been challenged.

There is criticism, for example, of legal education's focus on learning appellate case law. In the first place, and for some time now, legal educators and scholars have identified the likely role played by the adversarialism of legal education on law student well-being.[70] To the extent that law is taught through a focus on appellate case law and hypothetical problems involving disputes, traditional problem-solving method perpetuates and entrenches adversarialism. A widely recognised salve to adversarialism is the integration of alternative methods of solving problems, including by embedding alternative dispute resolution ('ADR') in core subjects[71] with some recommending standalone introductory and capstone subjects in ADR.[72]

A benefit of such an approach in terms of technologies and contextual learning, is that law students may be introduced to diverse forms of problem-solving, such as negotiation, that require them to consider factors outside the parameters of substantive law. Despite this benefit, ADR tends to be a solution, still, to disputes, ignoring the skills involved in the majority of legal work, namely transactions.[73]

Thus, secondly, and related to the critique of adversarialism, hypotheticals based on a case method approach ignore an expanded suite of thinking skills intrinsic to legal transactions.[74] Like the skills involved in negotiating disputes, transactional work involves thinking around the immediate legal issues: assessing risk, identifying and evaluating alternatives, locating the legally *and contextually* appropriate solution to the problem at hand.[75]

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[70] Rachael Field and James Duffy, 'Law Student Psychological Distress, Alternative Dispute Resolution, and Sweet-Minded, Sweet-Eyed Hope' (2012) 23(3) *Australasian Dispute Resolution Journal* 195; Rachael Field and James Duffy, 'Better to Light a Single Candle than to Curse the Darkness: Promoting Law Student Wellbeing through a First Year Law Subject' (2012) 12(2) *QUT Law and Justice Journal* 133.

[71] Tania Sourdin, 'Not Teaching ADR in Law Schools? Implications for Law Students, Clients and the ADR Field' (2012) 23(3) *Australasian Dispute Resolution Journal* 148; Martin Seligman et al, 'Why Lawyers are Unhappy' (2005) 10(1) *Deakin Law Review* 49.

[72] Rachael Field and Alpana Roy, 'A Compulsory Dispute Resolution Capstone Subject: An Important Inclusion in a 21st Century Australian Law Curriculum' (2017) 27(1) *Legal Education Review* 73; Kathy Douglas and Rachael Field, 'Teaching Non-Adversarial Practice in the First Year of Law: A Proposed Strategy for Addressing High Levels of Psychological Distress in Law Students' (Conference paper, 14th Pacific Rim First Year in Higher Education Conference, 28 June 2011 to 1 July 2011).

[73] See, eg, David Howarth, *Law as Engineering: Thinking About What Lawyers Do* (Edward Elgar, 2014).

[74] See, eg, Tina L Stark, 'Thinking Like a Deal Lawyer' (2004) 54(2) *Journal of Legal Education* 223.

[75] See, eg, Lynnise E Phillips Pantin, 'The Economic Justice Imperative for Transactional Law Clinics' (2016) 62(1) *Villanova Law Review* 175; Carol Goforth, 'Transactional Skills Training Across the Curriculum' (2017) 66(4) *Journal of Legal Education* 904; Andrew Godwin, 'Teaching Corporations Law from a Transactional

Thirdly, and again bound up with the constraints of hypothetical legal problem-solving is what Barton describes as the 'tense' of legal problem solving.[76] By that he observes that the case method, with its hypothetical problems, requires a backward-looking approach. Students look at the facts and look back into the law—itself deciding retrospectively—to analyse the problem. He points out that this fails to engage students in creative thinking or in thinking prospectively. Their thinking is necessarily constrained by the operation of the law as posited. As Merritt similarly observes, this mode of legal reasoning invokes 'rule-changing justice', as opposed to the 'rule-abiding justice' intrinsic to the benchmark hypothetical legal problem.[77]

For transactional legal practice (and transactional legal thinking) as well as law reform work and analysis of new law, lawyers must engage in creative, prospective thinking. Imagining the effects of technology on the law is one such context that requires a creative, analytical approach. This is another side of thinking like a lawyer that involves engaging with the law but not in the context of a dispute. Like ADR, it offers the prospect also for introducing new contexts and imagining the impact on the text of the law itself.

It is this prospective model of legal reasoning that we suggest offers a means of integrating diverse contexts into the core curriculum: including the context of new technologies. It is not unknown in the practice of law or in legal education to analyse the impact of an event or proposition on the text of the law. It is not, therefore, beyond the realms of our collective experience as lawyers and educators to undertake such a task. It is, though, useful to consider a framework for analysing the effect of technology on doctrine given that this more theoretical approach differs from the generic hypothetical and the IRAC process. In this regard, we draw on the framing of an expanded format of legal problem solving articulated by Galloway, Castan and Flood.[78]

Given a proposition for the functioning of a new technology, there is a generalisable analytical process that might offer students—and law academics—clarity of approach. First, students must understand the nature and operation of the relevant technology. This explicitly draws in an appreciation of the 'broader context' of technologies. While not doctrine, the capacity to engage with a brief to comprehend the nature of a client's problem is integral to legal work. In analysing the effect of new technologies, it is vital that students undertake this preliminary step.

As Backer observes in the context of internationalisation, when introducing new approaches to curriculum law academics are likely

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Perspective and Through the Use of Experiential Technique' (2015) 25(1) *Legal Education Review* 1.

76 Thomas D Barton, 'The Modes and Tenses of Legal Problem Solving, and What to Do About Them in Legal Education' (2007) 43(2) *California Western Law Review* 389.

77 Deborah Jones Merritt, 'Cognition and Justice: New Ways to Think Like a Lawyer' (2016) 69(1) *Arkansas Law Review* 47.

78 Kate Galloway, Melissa Castan and John Flood, *The Global Lawyer* (LexisNexis, 2020) 148–9.

themselves to need to upskill.[79] Comprehending new technologies is no exception. Academics will need to initiate student inquiry and therefore, need at least some understanding of contemporary issues involving technology in their field. For example, e-discovery is a high-profile issue in civil procedure[80]—the technology is an applied legal technology, but a technology, nonetheless. Automated vehicles are similarly a well-known issue of the application of technology in torts.[81] Not a *legal* technology, but a technology deployed in society which might raise novel issues for the law. It would be possible for academics to set students the task of identifying an issue in the relevant field, or to set a topic for analysis.

Of note also, it cannot be assumed that students will comprehend the mode of operation of technologies. The myth of the 'digital native' has long been dispelled.[82] This initial step, therefore, is essential to being able to analyse the intersection of law and technology. It need not require a deeply technical understanding—but a sound understanding, gleaned through online materials, is required.[83] The skill of locating the relevant information, finding out about the operation of new technologies, is central to this capability.

Secondly, once understanding the operation of the technology, students need to identify how the technology changes what is done now. This is a means of teasing out the likely legal and policy issues. This stage of analysis effectively generates the issue that forms the basis of analysis. In the case of automated vehicles, for example, the change might be described as having no human in charge of a vehicle whilst in motion. Currently, a driver is responsible at law for harms arising from negligence. The difference arising from this new technology becomes the *issue* of: 'who is liable for damages arising from the use of automated vehicles?'[84] An analysis of e-discovery becomes the issue of whether the automated process meets the threshold requirements of the law of civil procedure. The analysis requires both a sound understanding of the operation of the technology, and a good understanding of the law relating to discovery and the policy underpinning it. Similarly, automated decision-making by executive government requires an understanding of the basis of the exercise of discretion as a feature of the rule of law, together with a comprehension of the 'fit' of technology designed to replace a human decision-maker.

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79 Backer (n 9) 126.

80 See, eg, Federal Court of Australia*, Practice Note GPN-TECH: Technology and the Court,* 25 October 2016.

81 See, eg, Mark Brady, 'Is Australian Law Adaptable to Automated Vehicles?' (2019) 6(3) *Griffith Journal of Law & Human Dignity* 35.

82 See, eg, Sue Bennett, Karl Maton and Lisa Kervin, 'The "Digital Natives" Debate: A Critical Review of the Evidence' (2008) 39(5) *British Journal of Educational Technology* 775; Neil Selwyn, 'The Digital Native – Myth and Reality' (2009) 61(4) *Aslib Proceedings: New Information Perspectives* 364.

83 For a model overview of broad types of new technologies, see, eg, Galloway, Castan and Flood (n 78) 116–21.

84 See, eg, Tania Leiman, 'Law and Tech Collide: Foreseeability, Reasonableness and Advanced Driver Assistance Systems' (2020) *Policy and Society*, DOI: 10.1080/14494035.2020.1787696.

The third step is to identify how the technology 'fits' with existing law and policy: whether it works within the existing law; challenges it; or whether the law fails to comprehend its operation. If the latter, the question is whether the law requires change. In this respect, the task expands on the standard hypothetical, allowing students the opportunity to engage with the law prospectively whilst also requiring an understanding of the current law and policy. As Barton observes, this is creative legal thinking.[85]

Returning to the automated vehicle example, this third step in the analysis might canvass the policy behind tortious liability (why does the law require liability for negligent damage?), the possible alternative loci of liability in the creation of the technology of an automated vehicle, are autonomous vehicles caught by tort law, and so on. Ultimately, it might ask whether negligence is possible without human involvement—or what human involvement *means* to the law.

In the case of automated decision-making, the question becomes whether an automated decision based on an algorithm evinces the discretion of the empowered lawmaker. Students (and indeed lawyers) must grapple with the valid application of State power and the essence of the protections afforded by administrative law. In both cases, the lens of technology offers students the opportunity to work through the possibilities of the law and its future in a way that is not available in a traditional hypothetical.

In the final stage, students might consider the risks and benefits of the technology to the law and to society. While this is effectively the concluding part of analysis, it offers the scope for further creative thinking in imagining the possible outcomes of a variety of scenarios. For example, how might the law deal with the risks of the technology so that society can harness the benefits.

While this part has provided an overview of the steps in an analytical method of considering technology and the law, we turn now to a more detailed case study illustrating the method at work.

IV INTEGRATING BLOCKCHAIN INTO PROPERTY LAW TEACHING: A CASE STUDY

An example of a new technology that would be suitable for the study of property law doctrine through such a different model of legal pedagogy, is that of a recent proposal to launch a new system of fractionalised land title utilising blockchain technology, which we will refer to as the 'Bricklet' scheme. This approach mirrors what would likely occur in practice, for example a lawyer may be required to advise a prospective Bricklet customer or the scheme organisers on the legal risks involved in or legalities of such a transaction.

In the discussion that follows, we model the application of the problem solving method outlined above, using the Bricklet scheme. Importantly, we do not advocate that every law academic (or property

[85] Barton (n 76).

law academic) must become an expert in blockchain. We have selected this case study because we have, ourselves, undertaken this analysis. In doing so, we have interrogated the method undertaken as a means of legal problem solving. Although we include some technical discussion, we present it here to illustrate the process of thinking rather than presenting the technology (or the law).

A *Understanding the Technology*

The Bricklet scheme, as originally advertised by the South Australian government,[86] involved a system of 'fractionalising' the individual apartments in two new residential towers into 'bricklets' which would then be sold via blockchain technology.[87] Each individual apartment or lot would be owned by up to 20 co-owners. The interests of bricklet owners would be recorded on the blockchain and would also be automatically added to the Torrens register.[88] To understand the proposal requires an understanding of blockchain technology.

Blockchain technology consists of a highly secured computer network that records transactions between participants and ownership in digital assets through a shared registry.[89] Every node in the blockchain has an identical copy of the ledger of all transactions and verification of transactions are done by agreement between the nodes. The record of the blockchain—ie the ledger—is generally regarded as immutable, and reflects all transactions starting at the first entry. This is made possible by the unique feature, namely that in the 'chain of blocks [of data]' the entire history of all transactions is recorded, because each new block has the hashed information of the previous block.[90] Accordingly, all changes to information on the blockchain form part of the permanent unalterable record of the blockchain.[91] Further, the use of cryptographically encrypted messages and a private blockchain with limited participants provide exceptional security.

In undertaking our own analysis, we identified that the then-published proposals omitted detail that was crucial to comprehending how the scheme might work. It illustrates that in analysing emergent technologies, there may well be a gap in how a given technology application is articulated. This may not be due to our own lack of comprehension but may arise from an incomplete scheme. It highlights the importance of lawyers' digital capabilities. While we had sufficient combined knowledge to work up a likely method for the scheme's

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86 In conjunction with Bricklet – the company. See Bricklet (Web Page, 2021) <https://bricklet.com.au>.

87 Francina Cantatore, Kate Galloway and Louise Parsons, 'Fractionalised Land Interests: More Questions Than Answers' (2020) 28(2) *Australian Property Law Journal* 39, 39. At the time of writing many other properties outside of South Australia have been 'fragmented' (or 'fractionalised') and sold as such by Bricklet. See Bricklet (Web Page, 2021) <https://bricklet.com.au>.

88 Cantatore, Galloway and Parsons (n 87) 39.

89 Michael Nofer et al, 'Blockchain' (2017) 59(3) *Business and Information Systems Engineering* 183, 183-4.

90 Ibid.

91 Ibid.

operation, being able to identify this gap illustrates further analytical potential for learning. However, to run this exact example for students who have no prior knowledge of blockchain applications would require a sufficiently scaffolded approach.

In this case, we resolved the gap in detail of the proposal by assuming this type of scheme would involve representation on the blockchain of the interests purchased by tokens that can be 'marked with metadata linking them to off-chain assets' (ie assets that exist in physical form, rather than purely digital assets). [92] The tokens can indicate which types of rights are associated with a particular asset. [93] This is a form of tokenisation that 'involves establishing a proxy for a part interest in nominated land, but does not involve a registered interest in that land'. [94] Tokenisation is also used in managed investment schemes and investments in land-owning legal entities, [95] as tokenisation allows for the financial fractionalisation of property interests.

In fact, fractionalised property ownership was not a new concept when the Bricklet scheme was first announced. [96] Fractionalised property ownership has for example been implemented by schemes such as BrickX. [97] The term 'fractionalisation' has been used to describe any division of rights in real estate to smaller units. For example, according to Graglio and Mellon, 'fractional ownership' refers to 'multiple parties sharing the rights and responsibilities of owning a real asset (ie a house, a condominium, or a commercial building)'. [98] Fractional ownership can also include fractional occupancy (such as time share schemes). [99] Some similar schemes involve ownership of shares in a trust, with the trust owning the property. [100]

However, what distinguished the Bricklet scheme from other similar schemes, was the simultaneous registration of the ownership on the Torrens system. Owners would hold a fragment of the property directly

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92 J Michael Graglia and Christopher Mellon, 'Blockchain and Property in 2018: At the End of the Beginning' (Conference Paper, Annual World Bank Conference on Land and Poverty, 19–23 March 2018) 22. See also Cantatore, Galloway and Parsons (n 87) 48.

93 J Michael Graglia and Christopher Mellon (n 92) 22. See also Cantatore, Galloway and Parsons (n 87) 48.

94 Cantatore, Galloway and Parsons (n 87) 48.

95 Ibid 48.

96 See for example Nir Kshetri, 'Will Blockchain Emerge as a Tool to Break the Poverty Chain in the Global South?' (2017) 38(8) *Third World Quarterly* 1710; See generally Raquel Benbunan-Fich and Arturo Castellanos, 'Digitization of Land Records: From Paper to Blockchain' (Conference Paper, Thirty Ninth International Conference on Information Systems, 2018). See Cantatore, Galloway and Parsons (n 87) 48.

97 Cantatore, Galloway and Parsons (n 87) 47.

98 Graglia and Mellon (n 92) 21.

99 Cantatore, Galloway and Parsons (n 87) 47.

100 See BrickX, *Product Disclosure Statement for the BrickX Platform* (1 June 2019) BrickX Financial Services, 1 <https://assets.brickx.com/downloads/brickx-pds-2019-06-01.pdf>: "BrickX Financial Services is the Responsible Entity of the BrickX Platform and the issuer of Interests and has contracted BrickX to assist in preparing this Document. BrickX is a corporate authorised representative (number 001000043) of BrickX Financial Services, authorised to market the BrickX Platform and arrange to deal in Interests and Bricks".

and would not be investing in a trust or financial product or intermediary platform.[101] Accordingly in more recent communications by the Bricklet company, a distinction is drawn between 'fractionalised' property ownership, and their own scheme which they describe as 'fragmented' ownership.[102]

B *How the Technology Changes Current Practice*

Having established an understanding of the technology, this step and the next require students to understand, first, the current law and its operation, and then the extent to which the new technology fits with this law or challenges it. Without needing necessarily to assess the technology, to assess the legal viability of the Bricklet scheme within the existing legal framework or to identify the potential need for reform of the legal system to support such a technological innovation, students must become familiar with the legal ecosystem in which the proposal would operate.

In our own analysis, the core issue in this proposal is the question of the government guaranteed title to land created by virtue of recording on the Torrens register. The scheme creates interests in land both on the Bricklet blockchain and also on the government land register. The scheme is therefore a significant deviation from current practice in land titles. But it represents additional opportunities for analysing the core doctrinal foundations of real property.

Again, in our own analysis, we questioned whether the blockchain interest would be categorized as real or personal property. Students would have the opportunity to explore property as a legal concept. Particularly, becoming an 'owner' of a fractionalised title, and an 'owner' of a representation of this ownership through a token on a blockchain, requires an understanding of what it means to own property, as well as of property per se. As pointed out by the High Court of Australia in *Yanner v Eaton*,

> 'property' does not refer to a thing; it is a description of a legal relationship with a thing. It refers to a degree of power that is recognised in law as power permissibly exercised over the thing. The concept of 'property' may be elusive. Usually, it is treated as a 'bundle of rights'.[103]

This takes the scope for analysis further, potentially altering the rights held by the owner of a bricklet. Further, each physical apartment would have multiple 'owners' providing students with the opportunity to consider the possible effects on existing models of shared ownership, including joint ownership.

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[101] See David Ridgway MLC, 'SA-based Innovation to Revolutionise Property Investment Bricklet by Bricklet' (Media Release, 23 September 2019) <https://www.premier.sa.gov.au/news/media-releases/news/sa-based-innovation-to-revolutionise-property-investment-bricklet-by-bricklet>.

[102] See Harrison Astbury, 'What is Fragmented or Fractional Property Investment' (Web Page, 18 August 2020) <https://www.savings.com.au/home-loans/investing/what-is-fragmented-or-fractional-property-investing>.

[103] *Yanner v Eaton* (1999) 201 CLR 351, 365-6 [11].

C *The Technology's 'Fit' with Current Law*

The parallel registers—blockchain and Torrens—suggested by this scheme call into question some key features of the existing law and provide a basis for analysing whether the proposal works with existing concepts, or whether (and what) reform might be required.

From a doctrinal perspective, a deep understanding of the differences between real and personal property and the land registry (Torrens) system is required. Real property includes interests in land as well as the fixtures and structures on the land.[104] The Torrens title to the apartment sold in the Bricklet scheme would be categorised as real property, and will by all accounts likely form part of a strata development.[105] This does not necessarily address the interest recorded on the blockchain which may be construed as personal property.[106]

Again, and illustrating the potential to promote student learning, on our analysis, the Bricklet scheme and its fractionalised property interests confound these two categories. The effect of Bricklets is that there is the potential for the creation of new types of rights, which would offend the *numerus clausus* (closed list) principle of real property.[107] At common law, real property is subject to a principle that there are only certain interests that can be registered against the title of real property [108] and that land rights cannot be customised by the landowners.[109]

Further, with the creation of two separate types of rights—one for real property (an interest on the land register) and one for personal property (on the blockchain) — two separate markets may be created, with differential values.[110] For example, because of the ease with which blockchain assets can be traded, the value of a blockchain-housed bricklet may appreciate in value faster than the actual apartment in the physical real estate market. It should be noted that it is an established principle that property cannot be both 'real' and 'personal'.[111]

In addition, property — both real and personal — can be used to create security interests. This is one of the fundamental characteristics of property. Security over real property is registered on the title pursuant to the provisions of the land title legislation of the respective

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[104] Anne Wallace, Les McCrimmon and Michael Weir, *Real Property Law in Queensland* (Thomson Reuters, 5th ed, 2020) [1.60]-[1.70].

[105] Strata title is a mode of property ownership in which certain parts of a property is owned individually, and the ownership in other parts (the so-called common areas) is shared. Ibid 537 [13.20].

[106] Duncan Sheehan, *The Principles of Personal Property Law* (Bloomsbury, 2nd ed, 2017) 2.

[107] Cantatore, Galloway and Parsons (n 87) 49, 51.

[108] Ibid 51.

[109] The *numerus clausus* principle, commonly referred to as a principle governing land law, is firmly established under the common law. See Brendan Edgeworth, 'The Numerus Clausus Principle in Australian Property Law' (2006) 32(2*) Monash University Law Review* 387.

[110] The value of the real estate may be different from the value at which the Bricklet is sold. See Cantatore, Galloway and Parsons (n 87) 51.

[111] With the exception of chattels real (leasehold interests) are the only hybrid category in property law.

States and Territories; security over personal property may be registered under the *Personal Property Securities Act 2009 (*Cth) (PPSA), or not registered at all. These interests can affect ownership rights. What students may be able to pinpoint, after understanding the doctrinal concepts, is that conflicts may arise between security interest holders in the real property (ie the apartment or land itself) and security interest holders in the personal property (the units or bricklets on the blockchain).[112] As more flexible and convenient trading would be possible of bricklets on the blockchain, they would likely be attractive security in commercial transactions. These security interests will be treated as personal property, whereas interests in the land will be treated as real property.[113] Students should be able to identify that complex and intersecting questions of priorities may arise that will need to be provided for in a system that may generate differential interests between the security interest holders in the real property and the security interest holders in the personal property. Although it would be possible to regulate these issues contractually, complexities may arise in insolvency especially between the security interests of holders in the real aspects of the property, and security interest holders in the personal aspects.

Students could consider whether the interests of bricklet holders may include equitable interests in land as equitable interests are possible under Torrens legislation.[114] An equitable interest in land may be created through a blockchain transaction. This interest could be a personal equities exception to a registered interest, [115] or it could be an agreement to create a legal interest.[116] What students should recognise through a study of equitable interests in real property, is that the certainty and transparency of the land title that is created in the real property through the Torrens system may be eroded by title replicated on the blockchain.[117]

The Bricklet scheme, through fractionalised ownership, ostensibly intends to create an estate in fee simple co-owned by multiple owners.[118] Because the apartment will be used as a residence, students will have to consider the effect of the tenancy of the tenant on the rights and obligations of the Bricklet owners, and the effect that smart contracts giving effect to the various transactions may have. Smart contracts are autonomous, self-executing code, and would, at least hypothetically, be very effective in executing transactions between the tenant and the Bricklet owners, the property manager, and other parties. Although the legal nature of smart contracts, and questions as to whether smart contracts are the contract or just an electronic version of

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112 Cantatore, Galloway and Parsons (n 87) 52.

113 See ibid 52.

114 See, eg, *Heid v Reliance Finance Corp* (1983) 154 CLR 326; *Bahr v Nicolay (No 2)* (1988) 164 CLR 604 ('*Bahr v Nicolay*').

115 See *Bahr v Nicolay* (n 114).

116 See *Walsh v Lonsdale* (1882) 21 Ch D 9.

117 See Cantatore, Galloway and Parsons (n 87) 52.

118 An estate in fee simple constitutes a legal right to possession of a defined lot for an indeterminate term: see ibid 53.

a pre-existing contract, may fall outside of the ambit of a property law subject, students will, through this study, get to understand that the silos in which law schools cast subjects are artificial constructs. As would happen in practice, law students would have to demonstrate knowledge and understanding of legal concepts not strictly within a defined area of study.

There is furthermore a more pivotal property law principle which may hinder the operation of the Bricklet scheme, namely the principle of unity of possession which each co-owner enjoys at common law.[119] Each owner has the right to control the property, and each owner is subject to the actions of all of the other owners.[120] Therefore, the investors in the Bricklet scheme and the operator of the scheme will potentially face numerous challenges, not all of which may be effectively managed through contract.

Further, although the potential efficiency with which rent can be distributed and outgoings be paid via the encoded formulas on the blockchain is a very attractive feature of the Bricklet blockchain, questions remain as to whether the blockchain can or will be effectively integrated into the existing financial system of banks and insurers, without which the efficiency of payment could be made. This may be a particular drawback if the apartment is not rented out and if there is no rental income from which payments can be made.

A further important principle of co-ownership at common law is that all co-owners have a right in common with each other to possession of the whole property.[121] Although this is practically unlikely to cause a problem in the Bricklet scheme, issues such as voting rights in the body corporate, liability and possession will have to be addressed.

Lastly, students will have to develop a deep understanding of the landlord-tenant relationship as both real and personal property. The lease contract will contain interests that touch and concern the land,[122] as well as personal obligations.[123] Relevantly also, a lease does not need to be registered under Torrens to form a legal interest in land.[124] In addition to contractual rights, a tenant also holds a leasehold estate in land, and an interest in land may be created via the blockchain even if the lease is not registered.[125] A tenant will have other rights that could be exercised jointly and severally against the bricklet holders, including rights encapsulated in the existing residential tenancies legislation, and equitable rights.[126] The extent to which the physical apartment will have to be managed for and by the landlords/owners for the tenant may require more than smart contracts on a blockchain.

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119 See *Bull v Bull* [1955] 1 QB 234 ('*Bull v Bull*'); *Thrift v Thrift* (1975) 10 ALR 332 ('*Thrift v Thrift*').

120 See Cantatore, Galloway and Parsons (n 87) 53.

121 See *Bull v Bull* (n 119); *Thrift v Thrift* (n 119).

122 See *Spencer's Case* (1583) 77 ER 72.

123 See *Progressive Mailing House Pty Ltd v Tabali Pty Ltd* (1985) 157 CLR 17.

124 See, eg, *Land Title Act 1994* (Qld) s 185(1)(c)(b).

125 If the lease is for less than three years, the tenant will have a legal estate in land; if the lease is unregistered and for longer than three years, it will be an equitable lease.

126 Equitable rights include the relief against forfeiture. See, eg, *Shiloh Spinners v Harding* [1973] AC 691.

Given the extent of differences between the operation of existing land titling systems and the proposal for fractionalised interests, to give effect to the Bricklet scheme, legislative changes will almost inevitably be necessary. Students would have the opportunity of considering which changes may be required, and how such changes may have to be formulated and integrated.

D *Risks and Benefits of the Technology*

The final step in the analytical process is to ascertain the risks and benefits of the technology.

The Bricklet scheme is designed to provide particular benefits for persons who want to invest in real property in Australia. Part of the attraction lies in the possibility of owning real property, which is perceived to be a secure investment (and for many the ultimate dream), but at an affordable price point. For a relatively small amount (in the region of AUD20,000–50,000) ownership of part of an apartment could be ensured, thereby giving the owner the ability to share in the growth in the value of the asset. Typically, apartments owned in this scheme would not be occupied by the owners but rented out as investment properties, with the rental income as well as outgoings (expenses for insurance, management, repairs etc) shared proportionately among the owners.

Further, the promised security and ease of trading offered by blockchain technology are added advantages. As we have noted elsewhere, blockchain technology has unique characteristics that makes it possible to create a number of small interests in real property, and to make it easy for parties who do not know each other to hold small tradeable interests in these properties.[127] The advantage lies not simply in allowing secure transmission, but also (at least in theory) in providing a very secure and seamless manner for regulating the relationships between multiple owners.[128] Through the use of blockchain, rental income would be distributed to the bricklet owners automatically, and outgoings such as maintenance and insurance could be paid by automated deductions from accounts held by owners in a similar manner.

To the extent that land ownership is a significant source of wealth in Australia,[129] the scheme appears to answer a policy imperative that echoes the original implementation of the Torrens system as an economic tool promoting cost efficient and guaranteed land title. There is scope also to explore this in the context of the introduction of e-conveyancing as a means of reducing transaction costs for financial institutions.

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127 Cantatore, Galloway and Parsons (n 87) 40.

128 Ibid 40.

129 Australian Bureau of Statistics, 'The Australian Residential Property Market' (Australian Bureau of Statistics, 2015) <http://www.abs.gov.au/ausstats/abs@.nsf/Lookup/6416.0Feature+Article1Sep%202015>.

On the other hand, and a crucial aspect of this analysis, the scheme does not appear to offer any significant advantage in terms of security, over the Torrens system in Australia. In assessing this, students can explore the efficacy of the existing system, enhanced since the introduction of electronic titling.[130] However, assessing this requires both an understanding of the key concepts of the technology, and the key concepts of Torrens title.

In analysing the risks and benefits, the case study affords yet another opportunity for students to engage in a contextual analysis of real property and its technologies.

V CONCLUSION: CHALLENGES AND OPPORTUNITIES

For decades now, law academics have been faced with a barrage of new curriculum imperatives derived from higher education regulation, accrediting bodies, the needs of an increasingly diverse student body, and the profession that employs graduates. These diverse considerations have culminated more recently in the employability agenda for higher education. Despite the focus on embracing a broad array of skills and dispositions, the core law curriculum has remained focused on doctrine.

Inevitably, law schools and law teachers will deploy various strategies—curricular (in its broadest sense) and pedagogical—to diversify students' learning experiences. However, the ongoing discourse about graduate preparedness indicates that there is a need for a systemic overhaul of the law curriculum. In terms of graduating future-focussed lawyers, technologies and their interface with the law remain a key area ripe for development.

While there is a range of effective curricular experiences in play in Australian law schools that are designed to enhance law students' digital capabilities, we suggest that these tend to be aggregated, or segregated rather than integrated into the core curriculum.[131] Integrating, however, requires a particular and widespread commitment amongst faculty to achieve its goal.

We suggest, therefore, a means of integrating digital contexts within the core doctrinal curriculum through legal problem-solving. But not the traditional case-method hypothetical: rather, a future-oriented mode of legal problem solving.

The Bricklet case study provides an example of how to develop students' legal problem-solving skills, by requiring them to learn fundamental doctrinal concepts in a manner that mimics the provision of legal advice in legal practice. It is not only the knowledge of fundamental principles of property law that would benefit students, but also the skill of identifying, understanding and applying existing

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[130] See, eg, Roushi Low, 'Maintaining the Integrity of the Torrens System in a Digital Environment: A Comparative Overview of the Safeguards Used Within the Electronic Land Systems in Canada, New Zealand, United Kingdom and Singapore. (2005) 11(2) *Australian Property Law Journal* 155.

[131] Referring to Backer's description of curriculum discussed in Backer (n 9) 109.

doctrine in a novel scenario that involves a novel application of a digital technology. We suggest that this models an effective way to use practice-based learning in a compulsory subject as it mimics a situation in legal practice where an entrepreneurial client with a great idea may seek legal advice on their new idea.

A combination in teaching of traditional doctrine and theory, and a case study involving new technologies, can have good pedagogical outcomes, and importantly, enhance the employability of law graduates through providing the opportunity to develop a suite of thinking skills. The connections between and advantages of combining these three key attributes of a law graduate program provides real pedagogical value to students. Ultimately, integrating technology into doctrinal teaching in law school is a means to equip law graduates better for graduate positions and service to clients.