

# Current Criminal Law

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# Robot intelligence and the legal profession

*Sally Ramage*

## **Introduction**

The legal industry has seen a large amount of technologically- induced changes over the past 20 years: changes that have been termed electronic-discovery; Internet marketing; and computerised legal research using the vast libraries of LexisNexis; Hein-online; Lawtel; Westlaw; and many other such professional legal databases operated commercially. Most believe that such electronic changes to the lawyer's workplace appear to have reshaped the way the legal profession operates.

In the year 2014 a legal symposium was held on the subject of the legal profession's monopoly.

legal scholars argued that 'machine intelligence' is on the verge of further revolutionising the legal industry. The changes, they declared, could be similar to the undoing of print journalism following the rise of Internet media.

However, one must consider whether such legal futurists are simply applying the typical clichés about 'disruption' and the need to 'adapt or die' to the legal industry. The author has concluded that this full automation cannot apply to the legal profession without dire consequences that will later be realised- of inequity and miscarriage of justice, to name but two dire consequences.

## ***'Automation creep' hits the legal profession***

In the eyes of legal futurists, in the United Kingdom, the United States of America and many other developed countries can be seen the great disruption that automation can bring in its trail, due to the fact that designers of electronic automation are not lawyers and despite protestations, they (and also a huge proportion of the legal industry personnel) are unaware of the full extent of their professional tasks (thinking and action tasks) when broken down step-by-every-single-step.

Some technological developments have certainly changed, but not radically altered legal practice. Think legal research or discovery. You no longer flip through physical reporters or review discovery documents by hand. In these cases, the work remains largely the same. A lawyer still needs to review case law or dig through discovery, if only on a computer. What, though, if Westlaw suddenly just had your relevant cases or discovery software immediately found the smoking gun? Automation could someday remove much of the work lawyers do.

According to legal scholars John McGinnis and Russell Pearce, machine intelligence is *'on the cusp of substitution for other legal tasks -- from the generation of legal documents to predicting outcomes in litigation.'*#

The new automation, they argue, will focus on routine tasks, perhaps with lawyer oversight. Even if unauthorised practice laws do not change, those laws will not stem *'the emergence of widespread machine lawyering'* the professors say. The areas most likely to see a human being replaced by a silicon chip include:

Discovery

Legal Research;

Document Generated Brief;  
Standard Legal/Clerical Memo-Writing;  
and  
Computer Prediction of Trial Outcomes.

The above list consists mostly of lawyering-tasks that make practicing law interesting and potentially innovative.

### **Machines cannot replace persons in certain tasks**

It will not be surprising that those considering the possibility of their professional work taken over by computerised systems are sceptical as to any successful finality of the realisation of a fully computerised legal office manned only by a technician and a few legal personnel.

It is a fact that for decades the Western world and also many other countries in the rest of the world enjoy almost complete automation in many manufacturing sectors and other commercial industries where laborious manual chores are mostly fully automated in a large part of the world. Even in the domestic situation, a huge majority of manual chores consumed much of one's time and this was merely at the survival level.

### **Automated domestic laundry cleaning**

Consider the changes made to the cleaning of domestic laundry over the century by the invention and now widespread use of the '*automatic washing machine*' now widely available even to very poor households due to price reduction by 'economy of scale'. One need not take a day-off work to visit a National Trust property such as

Shugborough Castle in order to see the workings of manually laborious domestic tasks, although such a visit would help in the understanding of the breakdown of absolutely necessary manual chores in order to become enlightened of the thorough step-by-step study of each household task which a designer wishes to fully automate and this is absolutely necessary for success in inventions and the final rewards which society-at-large enjoys due to the designer's successful invention of a machine capable of replacing a trained human being.

### **The domestic 'automatic washing machine'**

Take for instance the household washing machine.<sup>1</sup> In centuries past, a person would spend the better half of a whole week on the household laundry, using a wooden 'dolly' to rub soap and water into each garment by garment; then manually rinse each item off manually, having had to fill a tub with water, boil more water to heat up the water needed to wash the household's laundry, wring each piece out manually, blue-rinse as necessary, second rinse manually those whitened pieces of laundry; wipe the clothes line clean; get the clothes peg container out; manually fill the washing into a basket; physically leave the building to begin to peg each item on the line for wind and sunshine, if any, to assist the drying process; manually empty the clothes tub's now-soiled water; manually rinse out the clothes wash-tub; wipe it dry and store it away; watch out for changes in weather in order to hastily unpeg the said washing should rain or snow begin to fall; and continue manually with the drying process by hanging out the washing very carefully in front of the fireplace on indoor clothes racks. By the day's end, if the washing has dried, it must be manually folded into a basket ready for

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<sup>1</sup> Later came the automatic dishwasher and many other 'appliances', each supplying a varying degree to automation, some needing much more human input in the process of their completion of that chore than others.

the next stage (starching, blue-rinsing, etc, already having been completed). Later, in order to iron out the washing, the pressing irons need to be manually made hot in the fireplace; then carefully wiped clean of soot or dust before ironing can begin, usually on the kitchen table, used to food preparation, consuming meals at; darning socks at; bottling jams and other preserves at, etc.

Imagine your doctor was replaced by a WebMD app. Suddenly, every ache and pain is everything from Lyme disease to shingles. Clearly, we're not there yet; computers have just barely begun to replicate complex human activities. Robot journalists, for example, can now write a passable news item, sometimes. But for programs seeking to replace skilled work, subtext, nuance and refined decision-making are not their strong points. Would any sane client, let alone a lawyer, want to put a computer in charge of their *voir dire*?

Even the biggest cyborg lawyer fans acknowledge that there are plenty of tasks automation won't be able to replicate. Further, many areas of law are simply too complex to be managed by an algorithm. But, for lawyers whose practice is largely managing routine, boilerplate matters -- watch out. The machines are on the rise.

**ENDS**

# USS Zumwalt-The United States Stealth Destroyer

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Introducing USS Zumwalt<sup>2</sup> to the legal reader, this Stealth Destroyer was due to be seaworthy by 2013, but was not ready until later. This is a new United States (US) naval warship, the most technologically advanced on the planet.<sup>3</sup>

US defence strategy includes a plan to place over half of its naval forces in the Pacific Ocean, set, in case of Asian trouble. The US homeland security views Asia as an area of interest with increasing trade importance to the US and also increasing potential threat from China's reach across the world's countries, thus flexing its 'power', a dangerous mix with such places as North Korea. Thus the US will have a prominent presence in the Pacific region, including the US Navy's futuristic new warship, now titled officially as *DDG-1000 Zumwalt* class destroyer, named after a former chief of naval operations Admiral Elmo Zumwalt (Junior)- not just one destroyer but several 600-foot vessels weighing 15,000 tons each. General Dynamics in Maine won the contract to build these Zumwalts at the Bath Iron Works. Before General Dynamics could begin the first Zumwalt construction, the company needed to construct a new facility to accommodate the Navy project and this new facility was built at a cost of US \$ 40 Million.

## General Dynamics' brief

The new destroyer is designed to operate both in the open ocean and in shallow, offshore waters. And it incorporates several *stealth* features, although why the US Navy divulged these important and valuable trade secrets is unfathomable, apart from a deliberate strategy to impress the enemy. Nevertheless we are told that the Zumwalt boasts:-

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<sup>2</sup> The lead ship and class are named in honour of former Chief of Naval Operations Admiral Elmo R. 'Bud' Zumwalt Jr., who served as chief of naval operations from 1970-1974. Admiral Elmo R. "Bud" Zumwalt Jr. was the 19th Chief of Naval Operations from 1970 to 1974 and the youngest man to serve as the Navy's top-ranking officer. During Admiral Zumwalt's decorated career, he courageously reformed and reshaped outdated personnel policies. He died in 2000. Like the admiral, this ship named in his honour, challenges conventional wisdom. Unlike any other destroyer ever built, USS Zumwalt is the most advanced warship in the world and represents a great technological advancement in United States naval shipbuilding.

<sup>3</sup> *The Smithsonian*, October 2012. See

<http://www.smithsonianmag.com/science-nature/introducing-the-uss-zumwalt-the-stealth-destroyer-38028566/#Eg1muvBM37dlfeCU.99>

\*A wave-piercing hull that leaves almost no wake.

\* An exhaust suppressor to reduce the vessel's infrared (heat) signature (definitely a trade secret).

\*An exterior designed to slope inward at a steep angle, creating a radar signature so small as to be compared to a small fishing boat (another definite trade secret, divulged).

The US Navy planned to secure 32 such destroyers but plans were hindered by soaring departures from financial budgets, as is usual. The real cost of building each stealth Zumwalt destroyer is calculated to cost US \$7 Billion. One would have thought that management would in this day and age, have learnt to factor in overspending and alter plans accordingly, rather than let it happen and Zumwalt fleet.

Hilariously and with seemingly hopeless incompetence, government agencies announced in the spirit of transparency that *only three of the planned 32 warships will now be built.*

The released statement reads as follows:-

*'Escalating development expenses compelled the Navy to scale back its initial plan for 32 ships to 3 (each of which now costs more than \$7 billion). The first of the new vessels, the USS Zumwalt, will be christened in 2013.'*

However, what kind of future is the US Navy expecting with a warship that could simply be much too powerful for its own good? This was one of the hypothetical questions thought up and published by the media. It was reported that Admiral Greenert had told news reporters that the stealth warship USS Zumwalt is expected '*to fit perfectly with the President's revision of American military presence in the Pacific to counter China's rise to power*'.

Admiral Greenert was not, however, a loose-tongue diplomat, but rather, when pressed by news reporter+, had refused to divulge more detail about the new warship and its function.

Undoubtedly, the US Defence Department was concerned about China's own naval modernisation, possibly forecasting potential future friction in the South China Sea , for instance, where China's territorial claims overlap Vietnam's, the Philippines and Taiwan.



## China's ballistic missiles

With China having constructed ballistic missiles, China could possibly hit America's massive aircraft carriers out at sea and disable them. Therefore the Zumwalt would seem to serve as a strategic weapon and Zumwalt's high-tech equipment should deter and defeat aggression close to shore. Zumwalt will maintain a presence where the enemy seeks to deny access, according to industry experts.

Zumwalt stealth destroyer can carry up to 80 Tomahawk cruise missiles, anti-ship missiles and 155 mm deck guns, making it one of the most heavily armed modern warships ever built. It is planned that it will be on duty along the shore with guided rocket projectiles ready to be fired from its deck guns.

In April 2014, the daughters of Admiral Elmo Zumwalt officially christened the 21<sup>st</sup> Century guided-missile destroyer *Pre-Commissioning Unit (PCU) Zumwalt (DDG 1000)* with the traditional breaking of ceremonial bottles of champagne on its gleaming bow. As if Zumwalt does not have enough super-powerful electronic war tools designed into it already, the US Navy would also like it to be fitted with *electromagnetic rail-guns that use magnetic fields and electric currents which can fire weapons at five times the speed of sound.*

With its 32-ship budget depleted once three Zumwalt warships are manufactured, the change in strategy is to return to building the economical-to-produce, tried and tested Arleigh Burke-class destroyers with their advanced Aegis radar system. At first USS Zumwalt performed traditional sea control missions and project power ashore.

The Zumwalt's new striking tumblehome hull is designed to be less visible to enemy radar, yet armed with numerous advanced technology and survivability systems to combat any threats. Equipment on board the Zumwalt include an Integrated Power System; an Advanced Gun System; SPY-3 radar; and MK 57 launcher. It has on board an advanced power plant to provide up to 78 megawatts of power (enough electricity to power about many thousands of American homes).

This capacity to generate power makes the Zumwalt the perfect platform for future deployment of rail-gun and laser weapons. Its Advanced Gun System can fire a 155 millimeter Long Range Land Attack Projectile with ranges to 70 miles, thus providing

accurate fire support to the Marines, the Army and Special Operations Forces ashore. Its SPY-3 radar is anti-ship cruise missile/periscope detection radar, giving high-accuracy, narrow beam width and wide frequency bandwidth. Its installed Peripheral Vertical Launch System is on the outside of the ship and encased in four-inch steel plate armour to contain the exhaust of hotter burning missiles. Including the Standard Missile, and the Vertical Launched ASROC, ESSM and Tomahawk Land Attack Missiles and requires no modification of the launcher control software. And yet, that ‘old chestnut, cyber attacks (allegedly from China) remains a threat to the US Navy.

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