**DELIVERY DRONES: DISRUPTIVE TECHNOLOGY IN THE SERVICES SECTOR**

INTRODUCTION

Unmanned aerial vehicles, commonly known as drones, constitute disruptive electrical engineering technology in an array of fields, including military, homeland security, entertainment, and services. They have drawn attention from various commentators, such as scholarly researchers, journalists, commercial actors, and public interest entities and individuals. The viability of drones in business is evident from the strategies of leading IT, retail, e-commerce, catering, postal, and delivery services including Amazon, Google, DHL, Domino’s, and Food Panda that have embraced delivery drones. Accordingly, it is apparent that delivery drones can be a profitable and beneficial business decision. However, like any other revolutionary ideas, the use of delivery drones also raises some concerns. These concerns notwithstanding, the potential advantages of embracing delivery drones outweigh the downsides. They are already revolutionizing commercial services and are proving critical to success in the sector because they not only make immense business sense but are also sustainable.

DELIVERY DRONES MAKE BUSINESS SENSE

Delivery drones make business sense because they are generally cost-effective. Dutton, [1] describing how drones are taking over delivery activities in the food service sector, posits that one positive effect they have relates to decreased costs of doing business. Thus, businesses that embrace delivery drones stand to benefit immensely by saving costs in various ways. Compared to current delivery models, primarily couriers using vehicles or motorcycles, delivery drones are obviously cheaper because they minimize recurrent expenditure. For instance, reliance on drones eliminates the need for couriers and minimizes overall labor costs. Additionally, maintenance costs for drones are arguably much lower compared to vehicles or motorcycles. Notably, their cost-effectiveness is not limited to businesses. There is contention that delivery drones can also translate to cheaper service delivery for consumers [1]. The decreased costs of doing business can benefit consumers by making services cheaper and increasing their purchasing power. Therefore, delivery drones constitute a viable, cost-effective option that will make life cheaper for both businesses and consumers.

Delivery drones also make business sense because they hold the potential for increased revenues. They can improve service delivery by increasing coverage, offsetting high-volume orders, and shortening delivery time [1]. Drones do not face the logistical constraints, such as traffic jams, that hamper typical delivery models. A shorter delivery time means that more sorties can be made in a smaller time frame compared to couriers using vehicles or motorcycles. Similarly, increased coverage means that more customers served, combined with the ability to offset high-volume orders, translate to more business revenue. Further, as noted above, drones are cost-effective even for consumers because of the potential for businesses to offer cheaper services to them. Accordingly, consumers can also acquire higher purchasing power that may encourage them to spend more. Increased expenditure by consumers obviously translates to increased revenues for businesses. It is apparent, therefore, that delivery drones make business sense because of the possibility of increased revenues for commercial entities that embrace them.

Drones make business sense because of the potential for minimized exposure to liability while doing business. The best example in this regard is the legal liability that arises when couriers are involved in accidents. Traffic accidents are a cause of legitimate concern for businesses involved in delivery services that usually expose the life and limb of carriers to danger. In the event of an accident, an entity may be liable to a third-party for damage caused by its courier. Further, if the courier is injured, the business may also have to cater to the medical expenses. Accordingly, businesses often accrue considerable costs in insurance and related fees designed to minimize their exposure to liability. Drones, however, move through the air [2]. Therefore, they eliminate all possibility of such liability arising from traffic accidents. Additionally, relying on drones minimizes the potential for human error during the delivery process thereby minimizing liability related to claims of breach of contract by consumers. Therefore, delivery drones make business sense because of the potential for minimized liability for businesses.

Flexibility is the other reason why delivery drones make business sense. Unlike conventional delivery models where branding may be a constraint, drones can be easily tailored to suit any purpose. Accordingly, it is easy for an entity to diversify into other niches as dictated by the business environment. For example, drones are already making headway in the food delivery sector [1]. However, a business that deals in food delivery is not restricted to this area because a drone can easily be converted for other purposes such as parcel delivery. In fact, a drone can be used to deliver food as well as a parcel simultaneously. It necessarily follows that drones can be used to pursue distinct business objectives at the same time thereby maximize the use of resources as well as facilitate the diversification of business. Notably, diversified business translates to increased revenues. Thus, delivery drones make business sense because of their flexibility that makes venturing out and expanding business easier.

DELIVERY DRONES ARE SUSTAINABLE

Delivery drones are revolutionary because they are environmentally sustainable. In a comparative study on the environmental effects of drones as opposed to motorcycles used in delivery services in rural and urban areas, researchers have established significant positive effects of drones compared to motorcycles [3]. As noted, drones do not suffer the disadvantage associated with traffic. Vehicles and motorcycles are a major source of emissions that are responsible for the degradation of the environment. Traffic jams are responsible for increased emissions since vehicles spend more time on the roads and, therefore, release more harmful gases into the atmosphere. It necessarily follows that drones are a perfect solution to combat carbon emissions because they have negligible global warming effects as there are lower levels of particulates released into the atmosphere. A reduced business carbon footprint is among the most important goals of sustainable development today. Therefore, businesses with the wish to eliminate their carbon footprint and contribute to the conservation and preservation of the environment ought to embrace drones.

Delivery drones are also sustainable because they can be designed to primarily rely on renewable energy sources which are eco-friendly. In contrast, vehicles and motorcycles, which are traditionally used in delivery, primarily rely on fossil fuel products that are known to have serious adverse effects to the environment. Although technology has also enabled the development of vehicles and motorcycles that rely on renewable energy, it is undeniable that developing drones is much cheaper and easier than vehicles with similar capabilities. Drones are smaller compared to vehicles or motorcycles and, therefore, renewable energy, like solar power, for example, is likely to run them more effectively than it would in vehicles. Further, businesses can make significant savings since renewable energy sources are essentially free as long as they possess the requisite tools to harness them. For example, a drone that relies on solar energy can have in-built solar cells and panels that facilitate continuous recharge even as it operates. Therefore, delivery drones operating with renewable energy can promote more sustainable business practices and processes.

Another aspect of sustainability relates to the time-saving aspects of delivery drones. As noted, delivery drones shorten the delivery period significantly [1]. As noted, drones do not face the constraints of traffic jam as they operate through the air. Therefore, droned are likely to make faster deliveries than couriers using cars or motorbikes meaning that more consumers are served by the drone as opposed to couriers within a similar time frame. Time is renowned as a finite resource that must be utilized in the most optimal means possible. The importance of time in business is embodied by the famous byline that, “time is money.” Therefore, the appropriate utilization of time in business is known to translate to better turnover. It necessarily follows that delivery service providers should opt for the means that maximizes the use of time and is least likely to incur unexpected costs. Drones provide that option as their time-saving ability contributes to a business’s overall reputation that ensures its long-term viability and sustainability.

Delivery drones also contribute to sustainability because the decreased overall costs make funds for corporate social responsibility available. Social responsibility for businesses is among the key pillars for overall sustainability. It denotes that businesses have an obligation to look out for the welfare of their consumers as well as the members of the community within which they operate. Accordingly, businesses are expected to set funds aside to cater to these responsibilities. The discourse above has explained how delivery drones can contribute to significant decreased operational costs as well as potential increased revenues for businesses. It necessarily follows that lower costs and more income means that more funds are available for businesses to engage in corporate social responsibilities. Delivery drones can, therefore, also contribute to the achievement of corporate social responsibility objectives by enabling the availability of more funds for that objective.

CONCERNS OVER THE USE OF DELIVERY DRONES

Privacy issues are among the major ethical concerns related to the use of drones. The surge in the use of drones has resulted in public concern over privacy issues [4]. Understandably, drones have the potential to be invasive if deployed with ulterior motives. Their operation through the air makes it easy for drones to access areas that are normally beyond people’s reach. Accordingly, drones can be used for surveillance purposes to gather information on the actions and movements of people discreetly. Possession of such an intrusive instrument, particularly in this era of social media and fast news raises legitimate concerns over the deployment of drones for purposes that can compromise the privacy of third-parties. However, this concern can be easily addressed. Firstly, delivery drones are not designed for surveillance but for logistical purposes. Thus, they are less likely to infringe on the privacy of others. Further, the risk of trespass can be mitigated by sticking to the designated route. Therefore, the privacy concerns associated with drones are minimized for delivery ones.

Inadequate or inappropriate governance structures for the operationalization of drone delivery services raise another concern. As noted, drones constitute a disruptive electrical engineering technology that is advancing at a rapid pace. Accordingly, developments in drone technology are occurring at a pace that is much higher than developments in the related governance and regulatory structures. Consequently, the governance and regulation of the operation of drones in most areas, particularly where drones are an emerging technology, is still backward and unable to cater to the prevailing demands of the sector. Therefore, many jurisdictions have inadequate laws and regulations on the operation of drones. It necessarily follows that businesses with the intention of venturing into this sector have to navigate uncertain governance structures. Uncertainty in regulatory structures makes for an unsuitable business environment because it discourages investors. Therefore, it is imperative for administrators to update their governance and regulatory structures to facilitate the operation of the emerging technologies.

Safety concerns also cloud the viability of using delivery drones. The major concern in this regard is air safety being that drones have the potential to interfere with the flight path of aircrafts. Therefore, any inappropriate use of drones creates the risk of collision with aircraft thereby causing air accidents and putting many lives at immense risk. Further, the serviceability of drones raises concerns because the possibility of mechanical failure during operation means that people on the ground may be exposed to serious risk. However, safety concerns over the operation of drones can be addressed effectively. Firstly, ensuring that drones operate within the strict confines of the designated altitude eliminates any potential for air accidents. Further, setting appropriate maintenance standards and adhering to them is critical to guarantee the safety of people on the ground. Thus, the safety concerns associated with drones can be mitigated effectively.

Finally, security concerns over their use also influences the adoption of delivery drones. Drones can compromise the security of places, whether a nation as a whole or specific places or events. For example, they have proved to be handy tools for terrorists to advance their objectives of instilling fear in the public. Accordingly, they can be used to deliver dangerous weapons such as bombs or bio-chemical agents to potential targets. Further, their primary reliance on the Internet and related technologies makes drones susceptible to compromise through hacking and, therefore, can be used as weapons in themselves if hackers gain control. Therefore, drones can be serious security threats if in the wrong hands. However, businesses can manage these security concerns by vetting those individuals mandated with operating the delivery drones as well as ensuring robust cyber security measures to ensure hackers never gain control of the drones. Therefore, although security concerns over the use of drones may be legitimate, they can be addressed by appropriate counter-measures.

CONCLUSION

In sum, delivery drones are a disruptive electronic engineering technology that will undoubtedly revolutionize the services sector. They are important because they not only make enormous business sense but also because they are sustainable. They make business sense because they are cost effective for both businesses and consumers, can result in increased business revenues, contribute to minimized exposure to liability, and easily facilitate business diversification. They are sustainable because they are eco-friendly, rely on renewable sources of energy, are time-sensitive, and economically sustainable. Nonetheless, there are concerns over their use, including privacy issues, inadequate governance structures, air safety, and overall security. However, the potential benefits of embracing delivery drones outweigh the possible downsides which, in any case, can be addressed effectively. Thus, drones herald the future and are crucial for success in the delivery sector.

References

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