

# Contents

	<i>page</i>
<b>Acknowledgments</b>	<b>xi</b>
<b>Preface</b>	<b>xiii</b>
<b>Introduction</b>	<b>1</b>
<b>1. New business models in the Fourth Industrial Revolution</b>	<b>11</b>
1. Introduction	11
2. Strategic innovation as a factor in new business models	12
2.1. The Fourth Industrial Revolution: Industry 4.0	13
3. The impact of new technologies on production	15
3.1. The impact of new technologies on internal logistics	19
3.2. The impact of new technologies on external logistics and after-sales services	23
4. The impact of Industry 4.0 on business models	25
<b>2. The new frontiers of remote sensing</b>	<b>27</b>
1. Introduction and the definition of remote sensing	27
2. Remote sensing platforms and tools	28
2.1. The “means of transport”: platforms	28
2.2. Sensors as “observation tools”	29
2.3. The technical characteristics of remote sensing tools	31
3. From images to maps: remote sensing techniques and methods	32
3.1. The statistical analysis of remote sensing images	32
3.2. Image enhancement techniques and vegetation indices	33
3.3. Thematic maps	33
4. Remote sensing and 4.0 technologies: precision farming and livestock farming	35

	<i>page</i>
4.1. Precision viticulture	36
4.2. The management of variability in agriculture	37
4.3. The global positioning system (GPS)	38
4.4. The GIS	38
4.5. Remote sensing at the service of archaeology	39
4.6. SAR radiometric sensors	40
<b>3. A brief history and classification of drones</b>	<b>41</b>
1. A brief history of the drones	41
2. The classification of the drones	47
2.1. Fixed-wing drones	48
2.2. Rotary-wing aircraft (rotorcraft)	50
3. Notes on the structure and functioning of drones	54
3.1. The structure of drones	54
3.2. The operation of drones	56
3.3. The radio control system	64
3.4. Aircraft engines	67
3.5. The composition and type of propellers	70
3.6. Batteries	71
3.7. Video and photo shooting tools	72
<b>4. The applications and use of drones</b>	<b>75</b>
1. Introduction	75
2. The public knowledge and acceptance of drones	76
3. The application of drones	79
3.1. Military applications	81
3.2. Civilian applications	83
3.2.1. Monitoring, inspection, and data collection	83
3.2.2. Logistics and drone operations	85
3.2.2.1. Drone-truck combined operations (DTCO)	88
3.2.3. Drone applications during the COVID-19 pandemic	93
4. The market dynamics of drones for civilian use	94

	<i>page</i>
<b>5. Digital transformation and corporate communication</b>	99
1. Communication in the value chain	99
2. The new forms of communication: methods and timing	103
3. Communication applied to innovation: the drone “case”	108
<b>Conclusions</b>	113
<b>References</b>	119
<b>Index</b>	127