|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Authors | Factor(s) under investigation | Context | | Content | Process |
| ***Internal*** | ***External*** |
| (Alghisi and Saccani, 2015) | Service design capabilities for successful implementation of service transition strategy. | 🟊 |  | 🟊 |  |
| (Alghisi and Saccani, 2015) | Top management commitments on investment in service growth. | 🟊 |  | 🟊 |  |
| (Kowalkowski et al., 2017a) | Agile leadership on service growth routes. | 🟊 |  |  | 🟊 |
| (Alghisi and Saccani, 2015, Lienert, 2015, Martinez et al., 2010, Johnstone et al., 2009, Gebauer and Friedli, 2005) | Internal marketing to create the internal buy-in that establishes the service culture. | 🟊 |  | 🟊 |  |
| (Burton et al., 2017) | New responsibilities/organisational realignment for service delivery. | 🟊 |  | 🟊 |  |
| (Parida et al., 2014) | Network management capabilities to facilitate the servitization transformation. | 🟊 |  |  | 🟊 |
| (Ulaga and Reinartz, 2011) | Availability of resources and knowledge on new service development. | 🟊 |  | 🟊 |  |
| (Gebauer and Friedli, 2005) | Employee education to facilitate the piloting of the service offering. | 🟊 |  | 🟊 |  |
| (Ahamed et al., 2013) | Clear goal-setting and performance criteria development to streamline internal processes for service development. | 🟊 |  | 🟊 |  |
| (Bastl et al., 2012) | Shifts towards user process-oriented services on the creation of a push for more collaborative relationships. |  | 🟊 | 🟊 |  |
| (Turunen and Finne, 2014) | Regulatory changes that can ban or facilitate new product–service offerings. |  | 🟊 | 🟊 |  |
| (Benedettini et al., 2015) | Broader social values, the customers’ satisfaction, relationship, loyalty and retention with the organisation, which can facilitate servitization. |  | 🟊 | 🟊 |  |
| (Neely, 2008) | The level of economic development, which can impact servitization. |  | 🟊 | 🟊 |  |
| (Story et al., 2017, Baines and Lightfoot, 2014, Lightfoot et al., 2011) | ICT that facilitates servitization by improving the delivery of new services. | 🟊 |  | 🟊 |  |
| (Holmström and Partanen, 2014) | Technology-driven design of solutions which facilitates servitization by allowing for new offerings to be considered. | 🟊 |  | 🟊 |  |
| (Kowalkowski et al., 2016) | Customer data availability on new service development. | 🟊 |  | 🟊 |  |
| (Bustinza et al., 2013) | The capability to collect data on the customers’ experience of goods/services to allow for a better insight into service-related consumer behaviour. | 🟊 |  | 🟊 |  |
| (Opresnik and Taisch, 2015, Lee et al., 2014) | Visualisation and analysis techniques for the processing of big data to facilitate the establishment of new service propositions. | 🟊 |  | 🟊 |  |
| (Schmenner, 2009) | Supply chain integration on the development of new service offering. |  | 🟊 | 🟊 |  |
| (Kamp and Parry, 2017, Story et al., 2017) | The open sharing of data and knowledge which can enable collaborative working between buyers and suppliers and the joint development of new service offerings. |  | 🟊 | 🟊 |  |
| (Eloranta and Turunen, 2016) | Platform approaches to provide structure for managing network cooperation in the servitization process. |  | 🟊 |  | 🟊 |
| (Story et al., 2017) | Managing partner relationships in the network to support the service value co-creation within the network. |  | 🟊 | 🟊 |  |

**Table 1**. Servitization studies’ focus on relationships between *context* and *content*

|  |  |  |  |
| --- | --- | --- | --- |
| Case Identifier | Industry/ Business Focus | Size (Turnover/No. of Staff) | Evidence of Advanced Services Trajectory (Reason for Engagement in Study) |
| Case A | Passenger and commercial vehicle and aircraft tyre manufacturer | ~ £12bn / ~ 70,000 | Chief Innovation Officer approached research team to enquire about transformation expertise and to identify industry leaders. |
| Case B | Gas turbine engine manufacturer | ~ £8bn / ~ 50,000 | Frequently cited in publications as exemplar of advanced services. |
| Case C | Rail transportation manufacturer | ~ £7bn / ~ 32,000 | Cited in trade press as most innovative and successful advanced service provider in rail industry. |
| Case D | Heavy equipment manufacturer | ~ £30bn / ~ 95,000 | Frequently cited as exemplar of advanced services in business and management publications. |
| Case E | Manufacturer and provider of document solutions and services | ~ £10bn / ~ 36,000 | Widely cited in trade press as most pioneering and successful advanced service provider of printing machinery. |
| Case F | Truck and trailer manufacturer | ~ £550m / ~ 34,000 | CEO engaged research team to audit advanced service operations with customers. |
| Case G | Packaging equipment manufacturer | ~ £600m / ~ 3,500 | Service Director engaged in discussion around advanced services at tradeshow, discussed industry trends, and how the company sought to innovate their offerings. |
| Case H | Manufacturer of air filtration equipment | ~ £3bn / ~ 1,900 | Director of IoT engaged in discussion around advanced services at tradeshow, discussed need to capture value through advanced services. |
| Case I | Heavy equipment manufacturer | ~ £5bn / ~ 18,000 | Service Director engaged in discussion around advanced services at tradeshow, discussed aspiration to compete through advanced services. |
| Case J | Manufacturer of precision motion control systems | ~ £2bn / ~ 10,700 | Director of IT approached research team to deliver keynote on advanced services at their annual service conference. |
| Case K | Power generation, renewable energy and transmission manufacturer | ~ £26bn / ~ 74,000 | Engaged in discussion with business development team following presentation by research team at field service conference. |
| Case L | Aerospace and defence equipment manufacturer | ~ £16bn / ~ 85,000 | The research team was introduced to new Business Development Manager with interest in advanced services via university liaison officer. |
| Case M | Lifting and material-handling manufacturer | ~ £700m / ~ 3,800 | Service Director engaged in discussion around advanced services following his presentation at field service event. |
| Case N | Manufacturer of transport temperature control systems | ~ £2bn / ~ 10,000 | Widely cited as the leading company in developing and delivering advanced services where controlled temperature is vital. |

**Table 2.** Overview of the selected case companies

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | *Exploration* | *Engagement* | *Expansion* | *Exploitation* |
| Definition | Searching and finding out about the concept and the implications of competing through advanced services, until they are confident that the opportunity exists. | Seeking to evaluate and demonstrate advanced services, until the potential is accepted within the organisation*.* | Increasing the scale and speed at which advanced services are innovated and implemented, until significant value is demonstrated within the organisation. | Seeking to optimise innovation and delivery of an advanced services portfolio, unless business is adversely disrupted. |
| Illustrations from the case studies (managerial concerns) | Is this right for us? (CEO, Case F)  How much money could we make? (Service Director, Case E)  Who does this well? (Business Development Manager, Case L)  What are the key customer requirements? (CIO, Case A)  What is the overall organisational mind-set on services? (Service Director, Case J)  What are our differential advantages? (Solutions Manager, Case L) | How do I get the board to invest? (Technical Director, Case G)  How do we educate our customers? (CEO, Case F)  Why can’t we just sell our monitoring technology? (Service Director, Case I)  What is the right business model? (CIO, Case A)  What should be considered as KPIs in experimentation projects? (Service Director, Case G) | How do we overcome our production legacy? (Service Solutions Director, Case M)  How do we build our market share? (Service Director, Case J)  Who are our competitors now? (Service Director, Case E)  How could this become an organisation-wide initiative? (CIO, Case A)  What acquisitions should we make? (CIO, Case A) | How do we integrate production with service? (Senior Engineering Manager, Case B)  How do we extend our services business? (CFO, Case F)  What next, both in terms of the service portfolio and organisation direction? (Service Director, Case C)  How do we improve efficiency of service delivery? (IT Director, Case H) |

**Table 3.** Characterisation of the four stages of servitization maturity

|  |  |
| --- | --- |
| 2  3  4  *Exploration*  *Engagement*  *Expansion*  *Exploitation*  0 | Incidents of stages over time |
| Case A |  |
| Case B  1  2  8 68  *Exploration*  *Engagement*  *Expansion*  *Exploitation*  0  2  3  5  *Exploration*  *Engagement*  *Expansion*  *Exploitation*  0  2  *Exploration*  *Engagement*  0 |  |
| Case C  1  2    6    *Exploration*  *Engagement*  *Expansion*  *Exploitation*  0 |  |
| Case D  2  4  4  5  5  *Exploration*  *Engagement*  *Expansion*  *Exploitation*  0 |  |
| Case E  1  3 3  6 6  *Exploration*  *Engagement*  *Expansion*  *Exploitation*  0 |  |
| Case F  2  *Exploration*  *Engagement*  0 |  |
| Case G  1  2 2  *Exploration*  *Engagement*  *Expansion*  0 |  |
| Case H  2  *Exploration*  *Engagement*  0 |  |
| Case I  3  4 4  *Exploration*  *Engagement*  *Expansion*  0 |  |
| Case J |  |
| Case K  1  *Exploration*  *Engagement*  0  1  3 2  4 4  *Exploration*  *Engagement*  *Expansion*  *Exploitation*  0 |  |
| Case L |  |
| Case M  1  3 3  6 6  *Exploration*  *Engagement*  *Expansion*  *Exploitation*  0 |  |
| Case N |  |

*\* Note: Time units are in years. 0 signals the start of the journey for the relevant case*

**Table 4.** Cross-case mapping of maturity stages over time

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Factor | *Presence of factors across cases* | | | | | | | | | | | | | |  |
| Case A | Case B | Case C | Case D | Case E | Case F | Case G | Case H | Case I | Case J | Case K | Case L | Case M | Case N | ***Examples from cases*** |
| Customer pull |  | ✓ | ✓ |  | ✓ |  |  | ✓ |  | ✓ |  | ✓ | ✓ | ✓ | * Strong appetite from customer base to experiment with new innovation * Initial request from key customers to purchase uptime rather that the asset * Customer engagements in experimentation projects * Level of maturity within the market about valuing outcome rather than the asset |
| Technology push | ✓ | ✓ |  | ✓ | ✓ | ✓ |  | ✓ | ✓ | ✓ | ✓ |  |  | ✓ | * The existence of the relevant technology to unlock the development of services-led offerings * Maturity of the *remote monitoring* sensors in the market * The realisation that new technologies could enable the company to do more * The threat from digital technology start-ups in analysing data from the use of the asset |
| Value network positioning |  | ✓ | ✓ | ✓ |  | ✓ | ✓ | ✓ | ✓ |  | ✓ | ✓ |  | ✓ | * Understanding of ‘who the customers actually are’ * Awareness of the fact that the partner company within the value network may change as the service proposition develops * Restructuring the relationship with dealers to get control and direct access to customers * Realisation of the existence of technology providers within the ecosystem, who could provide better, cheaper, and more effective tools to enable the company’s product to be smarter and provide a wide range of offerings to their customers |
| Organisational readiness | ✓ |  | ✓ |  | ✓ | ✓ | ✓ | ✓ |  | ✓ | ✓ | ✓ |  |  | * Empathetic that advanced services journey could only start if you have a realisable product * Experience of successful organisational transformation/acceptance of change * Understanding the importance of internal buy-in to move towards servitization * Organisational and strategic alignment across different business units * Having the right service vision and mission for the entire organisation |
| Organisational commitment | ✓ | ✓ |  | ✓ | ✓ | ✓ | ✓ |  | ✓ | ✓ |  | ✓ |  | ✓ | * Education of the senior management regarding the benefits of moving towards advanced services * Identifying new opportunities among existing customers to support the transformation progress * Engagement from the leadership in the development of advanced services offering early on * Development of a shared service to manage the data across different segments * Ability to learn from experimentation projects in the customer base |

**Table 5.** Cross-case analysis of contextual factors