| | Concerns (What?) | Values created (What for?) | Organizational perspective (How?) | External and internal factors influencing libraries | Innovations in libraries |
|---|---|---|---|---|---|
| **Sustainability 0.0 Increasing efficiency through centralisation and standardisation** | Economic concerns | Institution benefits from centralisation. Increased efficiency through standardisation and automation. | Inside-out thinking: "We know what is best for the customer". Focus on large user groups. | - Global information overload<br>- Emergence of computing<br>- Strong increase in student numbers<br>- Price spiral, "serials crisis» | - Rise of common standards and rules<br>- Professionalisation of staff<br>- Large library networks run library management systems<br>- Electronic journals, books and databases |
| **Sustainability 1.0 Strengthening customer orientation** | Three-dimensional concerns (economic, environmental, social) | Customer and environmental needs are taken in consideration. Reorientation from collection management to the user service. | Inside-out thinking: "We listen to our customers". | - Changing needs of users<br>- User surveys, usage data<br>- Power monopoly of large academic publishers and internet giants (example Google) | - Library as third place, learning spaces<br>- Usability studies<br>- Emergence of green libraries<br>- Open access offers new opportunities<br>- Project management + marketing in libraries are professionalised |
| **Sustainability 2.0 Sustainability targets as an element of library strategy** | Three-dimensional concerns (economic, environmental, social) | Three-dimensional value creation for broader stakeholder group (triple bottom line). Sustainability targets are part of the library strategy. | Inside-out thinking: "We think and act broadly". High degree of networking between the libraries. | - Strategic importance of sustainability<br>- New political or legal frameworks (example copyright)<br>- Researchers and funders demand sustainability<br>- Employees claim better work-life balance | - Sustainability targets are part of the library strategy<br>- Open Science gains momentum, introduction of OA monitoring<br>- Sustainability reports<br>- Revised copyright / CC licences<br>- Libraries explore new professional fields (research support) |
| **Sustainability 3.0 The library turns perspective to look from outside-in** | Starting sustainability challenges | Sustainability targets are in the foreground. The library thinks and acts globally. | Outside-in: "We are inspired and guided from the outside; together we contribute to the solution of societal challenges". | - Understanding of data and information as common good<br>- Call for radical changes<br>- Self-management, wholeness and evolution of organisations | - Participation of the library in the value creation process as a whole<br>- New, cross-border forms of collaboration<br>- Increased agility |
| **The key shifts involved:** | **1st shift: broadening the business concern** | **2nd shift: expanding the value created** | **3rd shift: changing the perspective** | | |

Table 2: Typology of sustainability in libraries, developed by Alice Keller based on Dyllick and Muff (2016). The black arrows mark the key shifts of each level.