

Routine and Innovation in Libraries

John Bednarz Jr.

Libraries are formal organizations of a particular type. In the language of Blau and Scott, they are “service organizations,” which have been formally established for the explicit purpose of achieving certain goals,” primarily for the benefit of their client group.¹ This distinguishes libraries from other types of formal organizations that achieve their goals in different ways and for the benefit of other groups. It is also this particular type of formal organization that determines what constitutes innovation for libraries and distinguishes their kind of innovation from the innovation of other types of formal organizations.

Innovation is a very popular concept in formal organizations. Nowhere is this perhaps more evident than in the case of business concerns. A business is another type of formal organization, whose owners are those who benefit.² In this case, the benefit is expressed in terms of profit from the sale of goods and services, so it is not difficult to see why innovation is a central concept in commercial enterprises. Businesses are constantly faced with competition that may reduce or even surpass their market share. For businesses that produce goods, for instance, there is a constant impetus to improve the product in order to preserve or increase market share. A product that lasts longer, performs better, does something not done by any other product before it, or even costs less, is considered an improvement over the one that does not. If this is a result of research and development, then it is considered a technological innovation.³ Therefore, in the case of business concerns, innovation is expressed in terms of a product, of a tangible commodity.

Service Organizations

Service organizations such as libraries are not of this type. They are not established to achieve their goal for the benefit of their owners, nor do they produce goods. Instead, they are established to provide services for the benefit of their clients (patrons). Their concept of innovation has to reflect this difference and be sought on a different basis. In this case the basic concept is service, and service has to do with behavior, not products. Innovation in service organizations, therefore, has to focus on behavior in these organizations. Nelson and Winter provide a helpful definition

in this regard because for them, “Both in customary usage and in our technical use of the term, ‘innovation’ involves change in routine.”⁴ This provides a behavioral definition of innovation and at the same time avoids that circularity often found in definitions of innovation.⁵ Routine, on the other hand, comprises, “All regular and predictable behavioral patterns . . .”⁶ This places routine at a tenuous border between behavior and action.⁷

Action and behavior can be used interchangeably because both are identifiable in terms of an external relationship and the change it produces there.⁸ The environment of action consists of both nonsocial (i.e., physical) objects and social objects (actors). The first kind is what Luhmann calls “social” action and merely requires that one “keeps in mind what others would think of it.”⁹ This kind of action is solitary. It includes, for example, “acts of bodily hygiene that are not observed by others . . . waiting alone in a waiting room, being home alone in the evening, reading, writing, (or) going for a walk alone.”¹⁰ Even though these are social insofar as they involve a reference to others in some way, they are different from the kind of action that refers to others that engage them. The latter is not mere social action, but interaction.

Parsons and Shils define interaction in terms of complementarily expectations between the actors, “not in the sense that the expectations of the two actors with regard to each other’s actions are identical, but in the sense that the action of each is oriented to the expectations of the other.”¹¹ Another way of saying this is that the possibility of interaction is based on a double contingency: for example, each actor must be able to anticipate or expect what the other anticipates or expects. And so contingency in this case does not refer to actions, but to the expectations themselves. This double contingency also informs social structures.¹²

Social Structures

This concept of social structures is not to be understood statically in terms of constancy, but functionally, in terms of performance. They “reduce the extreme complexity of the world to a rigorously narrowed and simplified range of expectations that are assumed and normally not questioned.”¹³ The need for this interpretation is rooted in the concept of disappointment. If interaction is possible only in terms of the expectations, and if expectations can be

John Bednarz Jr. (jabjnr@yahoo.cm) is librarian at Morris Hills High School, Rockway New Jersey.

disappointed, a mechanism is needed to absorb this doubly possible disappointment. Social structures do this by restricting the range of expectations to certain ones that can be assumed or taken for granted.

Examples of social structures, as they are meant here, include persons, roles, programs and values.¹⁴ The “person” is not meant, however, as either a psychical entity (consciousness) or even a physical individual (body), but what is constituted when the person “attracts and binds expectations to himself (that is, expectations about himself and expectations about others). The more and different types of expectations that are individualized in this way, the more complex the person.”¹⁵ So that in the person, expectations are accrued both for himself and for others. These expectations do not have to be the same, but they always, “distinguish and regulate what can be expected” and thereby make interaction possible.¹⁶

Attaching and binding expectations to oneself in this way, that is to say, as a person, distinguishes oneself individually as a whole. What is expected of a “person” is unique to the person. In this way the expectations are always understood from a concrete, total perspective. This distinguishes the person from roles, which, on the other hand, “serve to identify abstracter perspectives of contexts of expectations.”¹⁷ In contrast to the person, where expectations are addressed to the entire individual, roles are concerned “only with a section of the behavior of an individual, which is expected as a role, and with a unity that can be perceived by many, interchangeable individuals: with the role of a patient, a teacher, an opera singer, a mother, a medic, etc.”¹⁸ The expectations addressed to roles can be filled by different individuals, which is not the case for persons. And they do not address the individual as a whole. Otherwise, they function similarly in conditioning action, which is not limited to the perspective of the individual person or role.¹⁹

Programs

It can also be approached from the higher level of abstraction that Luhmann calls “programs.”²⁰ In this case behavioral expectations of more than one individual are the focus of interest. The situation is accordingly more abstract because the identification of expectations occurs here in terms of the conditions of the correctness of behavior.²¹ In other words, expectations at this level are no longer addressed to a single individual, but to the behavior of those of individuals.²² Programs do this by specifying the conditions for this (correct) behavior. They “start from two (and only from two) points. (They can) stipulate certain information as signals that trigger the choice of communication. And conversely (they can) fix certain communication in order to ascertain relevant information from it. The first case refers to the state of affairs commonly called routine.”²³

Accordingly, programs are divided into two kinds. They are either what Luhmann calls “conditional programs” or “means-ends programs.”²⁴ It is the conditional programs that describe routine. Fixing (prescribing) the conditions of correct behavior in this case is then a matter of identifying the information that will cause a certain action.²⁵ In this way, routines form general expectations through a program that is defined as independent (of circumstances) and invariant. As examples Luhmann provides the case of a traffic cop who “has to direct traffic at an intersection every time an already defined critical situation occurs, whenever it occurs, and regardless whether this involves delivery trucks, bicyclists, wedding limousines, a lecturer on his way to school, or the President’s chauffeur on the way to the gas station. What remain are entirely different episodes for the traffic is transformed by the traffic cop into the regular, reliable execution of a program.”²⁶ The program identifies (singles out) certain information from an uncontrollable and unpredictable environment and connects it with certain responses, thereby creating regularity. So, when Luhmann talks about programs establishing the conditions of the correctness of behavior, he has in mind the information that is identified for correlation with corresponding behavior that constitutes routine. As a social structure, routine is not just the mere repetition of individual action, which would be the case if routine were restricted to an individual or even to systems of production. In this case it involves the identification of a *causal* correlation.²⁷ One event (information) out of a plurality of other possible events (information) is specified as the cause of a specific response. The correlation is not tied idiosyncratically to a person or a role, but to information that works as a cause of specific action. The routine that results possesses this causal structure.

We can add clarity to this abstract analysis by relating it to communication. According to Luhmann, communication is a process of selection that constitutes information.²⁸ This means that the identification (singling out) of certain information is then correlated with specific behavior constituting routine. In other words, routine occurs when certain information (communication) is the trigger of action specifically correlated with it. Of course, this routine in this sense occurs only in those organizations that are constituted as systems of communication, not as systems of production.

Therefore, routine in libraries is this special kind of social structure that translates an irregularity of possible information (communication) into a regularity of response (action). It does this by singling out (selecting) that information (communication) that is relevant and correlating this with meaningful, responsive action. The full importance of routine in organizations is reflected in the fact that they “structure a large part of organizational functioning at any time.”²⁹ Even if it is not possible to determine a percentage of organizational functioning that is routine, without them, “organizations would not be efficient structures for collective action.”³⁰

Normally, organizational functioning is governed by standard operating procedures (SOPs), which are rules for effective cooperation within organizations that provide goods or services. These rules are explicitly written in advance, which distinguishes them from routines, but they are not environmentally sensitive, or at least not in the way that routines are. SOPs function by default: they are in effect at all times, unlike routines that take effect only under specific conditions. Furthermore, routines are of limited duration. They take effect as episodes in the functioning of organizations.³¹ SOPs continue to function without termination, unless they are rewritten. As episodes, routines do not replace SOPs, nor are they in conflict with them. Routines function within the broader context defined by SOPs, under specific conditions. They allow for programmed responses to uncertain and unpredictable events (for SOPs) in the organizational environment.³² In this way they contribute a flexibility that is absent in the case of SOPs. As environmentally sensitive, routines are emergent properties of organizations, coming into being in a response to environmental events. As emergent properties they are also subject to spontaneous change, which may, as Nelson and Winter indicate, “require modification.”³³

Innovation in Libraries

When routines are modified in this way they introduce innovation into the organization.³⁴ This is a departure from interpretations that emphasize the connection between technology and innovation.³⁵ But it is departure that is understandable in light of an absence of clarity and agreement about innovation. Helen Howard was perhaps the first to deal systematically with innovation in libraries.³⁶ She notes that a plurality of definitions has frustrated research in this direction.³⁷ The problem here results from the fact that for organizational research, innovation can be an idea, a practice, or an object.³⁸ New technologies in libraries have changed them dramatically, so that talk about innovation has found a focus here.

At the same time, however, Howard notes that innovation also extends to “organizational structural innovations.”³⁹ This comes much closer to the position of Nelson and Winter, but also relies on a hierarchical conception of organizational structure.⁴⁰ The difference here is that a study of routine focuses on organizational structures, not on the hierarchical structure of organizational positions. When routines are approached from the perspective of the social structures or organizations that establish the conditions of (correct, acceptable) responses to specific stimuli (causes and effects), both their effectiveness and their ubiquity become apparent. With Luhmann we can speak of them as “emergent” (organizational) properties that come into being as all social structures, because social action or interaction “cannot be spontaneously initiated in

every instant anew.”⁴¹ Instead, structures regulate organizational relations by making “particular lines of selection (of actions) . . . more probable than others (and) improve sensibilities in certain directions and deter them in others.”⁴²

In complex organizations such as libraries, these structures are indispensable. They “reduce” the ever-present complexity of interaction by fixing expectations. In the case of routines, the expectations are fixed in terms of the establishment of a conditional relationship between an occasion for action and the action itself. At the same time, as emergent properties of organizations, routines provide an unambiguous and imminent organizational basis for innovation. They are unambiguous insofar as they establish a unique basis for innovation. They are imminent insofar as they embody the activity of organizations themselves. Innovation is not found in technology, but in the way in which, for example, librarian and patron interact. This approach satisfies the organizational conditions of libraries. It focuses attention on that organizational aspect where libraries can productively introduce innovative change and highlights how, as service organizations, they depend on routine in order to do this.

Editor’s note: Unless otherwise noted, all translations are the author’s own.

References and Notes

1. Peter Blau and W. Richard Scott, *Formal Organizations* (San Francisco: Chandler Publishing Co., 1962), 7.
2. *Ibid.*, 43.
3. This agrees with the Oslo Manual definition found in the OECD. See *Oslo Manual* (European Commission–Eurostat), www.oecd.org/dataoecd/35/61/2367580.pdf (accessed Sept. 14, 2007). “Technological products and processes (TPP) innovations comprise implemented technologically new products and processes and significant technological improvements in products and processes. A TPP innovation has been implemented if it has been introduced on the market (Product innovation or used within a production process [process innovation]).”
4. Richard R. Nelson, and Sidney G. Winter, *An Evolutionary Theory of Economic Change* (Cambridge, Mass.: Belknap Press of Harvard University Press, 1982), 128. It is important to note that Nelson and Winter are economists and that they are trying to establish a theory of economic change based on the way in which business firms react in their environments. So that is operating within the context of what Blau and Scott call a “business concern.” Nonetheless, they provide a behavioral definition of innovation that finds application beyond the “business concern” type of formal organization.
5. Even Nelson’s and Winter’s own model; Joseph Schumpeter, who speaks of “innovations” in terms of “carrying out new combinations” of “materials and forces within our reach,” which then “appear discontinuously,” falls victim to this circularity. Joseph Schumpeter, *The Theory of Economic Development* (Cambridge, Mass.: Harvard University Press, 1961), 65–66; Helen Howard, in “Organizational Structure

- and Innovation in Academic Libraries," *College & Research Libraries* 42, no. 5 (Sept. 1981): 429, also defines innovation, following Victor Thompson, "Bureaucracy and Innovation," *Administrative Science Quarterly* 10, no. 1 (June 1965): 2 as "the generation, acceptance, and implementation of new ideas, processes, and products or services"; Judy Reynolds and Jo Bell Whitlach, "Academic Library Services: The Literature of Innovation," *College & Research Libraries* 46, no. 5 (1985): 402-17 also rely on Zaltman's definition: "any idea, practice, or material artifact perceived to be new by the relevant unit of adoption" (402). See Gerald Zaltman, Robert Duncan, and Jonny Holbeck, *Innovations and Organizations* (New York: Wiley, 1973), 10. At the same time, however, Reynolds and Whitlach also refer to Mintzberg, who defines innovation in terms of "Breaking away from established patterns" (402). See Henry Mintzberg, *Structure in Fives: Designing Effective Organizations* (Englewood Cliffs, N.J.: Prentice-Hall, 1983), 254. Mintzberg's definition comes very close to Nelson's and Winter's.
6. Nelson and Winter, *An Evolutionary Theory of Economic Change*, 14.
 7. For the vague distinction between behavior and action, cf. John G. Gunnell, "Political Inquiry and the Concept of Action: A Phenomenological Analysis," in Maurice Natanson (ed.), *Phenomenology and the Social Sciences* (Evanston, Ill.: Northwestern University Press, 1973), 216-17.
 8. Cf. Tolman, footnote 1, in Talcot Parsons and Edward Shils, *Towards a General Theory of Action* (Cambridge, Mass.: Harvard Univ. Pr., 1967), 279. See also Richard C. Sheldon, "Some Observations on Theory in the Social Sciences," 31.
 9. Niklas Luhmann, *Soziale Systeme* (Frankfurt a. Main: Suhrkamp Verlag, 1984) 580.
 10. Ibid. Translated from the German: "*Handlungen der Körperpflege unter Ausschluß der Beobachtung durch andere; abends allein in der Wohnung sein, Lesen, Schreiben, allein Spaziergehen usw.*"
 11. Parsons and Shils, *Towards a General Theory of Action*, 15.
 12. Cf. Niklas Luhmann, "Sinn als Grundbegriff der Soziologie," in Luhmann/Habermas, *Theorie der Gesellschaft oder Sozialtechnologie: Was leistet die Systemforschung?* (Frankfurt a. Main: Suhrkamp Verlag, 1970), 63. "Social structures do not possess the form of behavioral expectations—not to mention of behavioral modes—but the form of the expectation of expectations." Translated from the German: "*Soziale Strukturen haben nicht die Form von Verhaltenserwartungen, geschweige denn von Verhaltensweisen, sondern die Form von Erwartungserwartungen.*"
 13. Niklas Luhmann, *Legitimation durch Verfahren*, (Darmstadt/Neuwied: Luchterhand Verlag, 1975), 233. Translated from the German: "*Strukturen reduzieren die äusserste Komplexität der Welt auf einen stark verengten und vereinfachten Bereich von Erwartungen, die als Verhaltensprämissen vorausgesetzt und normalerweise nicht hinterfragt werden.*"
 14. Luhmann, *Soziale Systeme*, 429.
 15. Ibid. Translated from the German: "*Erwartungen an sich zieht und bindet, and wiederum: Selbsterwartungen und Fremderwartungen. Je mehr und verschiedenartigere Erwartungen auf diese Weise individualisiert werden, um so komplexer ist die Person.*"
 16. Ibid. Translated from the German: "*auszeichnen und das mitregulieren, was von ihr erwartete werden kann.*"
 17. Ibid. Translated from the German: "*abstraktere Gesichtspunkten der Identifikation von Erwartungszusammenhängen dienen.*"
 18. Ibid., 430. Translated from the German: "*nur um einen Ausschnitt des Verhaltens eines Menschen, der als Rolle erwartete wird, andererseits um eine Einheit, die von vielen and wechselbaren Menschen wahrgenommen werden kann: um der Rolle eines Patienten, eines Lehrers, eines Opersänger, einer Mutter, eines Sanitäters usw.*"
 19. Although person and role may function similarly in conditioning action, they can also be a source of stress when personal expectations may be in conflict with a role that an individual fills.
 20. Luhmann, *Soziale Systeme*, 432. "Possibilities of abstraction, however, are by no means exhausted by an expectational identification tied to roles. One can go beyond this by not limiting himself to the behavioral possibilities of an individual person. We then call the resulting expectational order *programs*." Translated from the German: "*Mit einer an Rollen gebundenen Erwartungsidentifikation sind jedoch die Abstraktionsmöglichkeiten keineswegs ausgeschöpft. Man kann darüber hinausgehen, wenn man die Begrenzung durch die Verhaltensmöglichkeiten einer Einzelperson aufgibt. Wir nennen die darum sich anbietende Erwartungsordnung Programme.*"
 21. Luhmann, *Soziale Systeme*, 432, "A program is a complex of conditions of the correctness (and this means of the social 'acceptability') of behavior." Translated from the German: "*Ein Program ist ein Komplex von Bedingungen der Richtigkeit (und das heisst: der sozialen Abnehmbarkeit) des Verhaltens.*"
 22. Luhmann provides the following examples of programs: a surgical process, preparing a department store for an end of winter sale, rehearsing and performing an opera, the transition of a colony towards independence. He says that the list can be extended. Cf. Luhmann, *ibid.*, 432.
 23. Niklas Luhmann, "Lob der Routine," in Niklas Luhmann, *Politische Planung* (Opladen: Westdeutscher Verlag, 1971), 118. Translated from the German: "*an zwei (und nur an zwei) Punkten ansetzen kann. Sie kann bestimmte Informationen als auslösende Signale für die Wahl von bestimmten Kommunikationen festlegen; und sie kann umgekehrt bestimmte Kommunikationen invariant setzen, um von dort her die relevanten Informationen ermitteln zu können.*"
 24. Luhmann, "Lob der Routine," 219. "They (routine programs J.B.) define certain information as causes." Translated from the German: "*Sie definieren bestimmte Anlass-Informationen.*"
 25. Ibid., 119. Translated from the German: "*Ein Polizist hat den Verkehr an einer Kreuzung zu regeln, jedesmal wenn sich eine vorher definierte kritische Situation ergibt, wann auch immer das geschieht, und ob es sich um Möbelwagen, Radfahrer oder Hochzeitskutschen handelt, um den Studienrat, der zur Schule fährt, oder um den Chauffer des Regierungspräsidenten, der zur Tankstelle will. Und was für den Verkehrsteilnehmer Episode bleibt in ganz verschiedenen Erlebnisfolgen, überträgt der Polizist in regelmässige, verlässliche Programmausführung.*"
 26. Niklas Luhmann, *Zweckbegriff und Systemrationalität*, (Frankfurt a. Main: Suhrkamp Verlag, 1970), 242. "Both possibilities of programming are conditioned by the complexity of the causal schema. . . . Because for every causal

sequence many causes have to coincide, causes can only be programmed conditionally, viz., through the fact that specific causes in indifference to others are selectively distinguished as triggers of action. Translated from the German: "Beide Möglichkeiten der Programmierung sind durch die Komplexität des Kausalschemas bedingt . . . Ursachen können deshalb weil für jeden Kausalablauf mehrere Ursachen zusammentreffen müssen, nur konditional programmiert werden, dadurch nämlich, daß bestimmte Ursachen unter Indifferenz gegen andere selektiv als Handlungsauslöser ausgezeichnet werden."

27. Luhmann, *Soziale Systeme*, 194. "Communication singles something out of the referential horizon that it itself constitutes at any time and leaves the rest aside . . . (I)t constitutes what it singles out as selection, viz., as information." Translated from the German: "Kommunikation greift aus dem je aktuellen Verweisungshorizont, den sie selbst erst konstituiert, etwas heraus und lässt anderes beiseite . . . (s)ie konstituiert das, was sie wählt, schon als Selektion, nämlich als Information."
28. Nelson and Winter, *An Evolutionary Theory of Economic Change*, 97.
29. Michael Cohen and Paul Bacdayan, "Organizational Routines Are Stored as Procedural Memory," in *Organizational Science* 5, no. 4, (1994): 555.
30. *Ibid.*, 555. "(Routines) not only provide a major determinant of the nature of short-run organizational responses to familiar and unfamiliar environmental stimuli . . ."
31. What Nelson and Winter call stochastic elements. Cf. Nelson and Winter, *An Evolutionary Theory of Economic Change*, 15. "Most of what is regular and predictable about business behavior is plausibly subsumed under the heading 'routine,'" and "The fact that not all business behavior follows regular and predictable patterns is accommodated in evolutionary theory by recognizing that there are stochastic elements."
32. *Ibid.*, 131.
33. *Ibid.*, 130. "An innovation may involve nothing more than the establishment of new patterns of information and material flows among the subroutines."
34. Among others, see, for example, Allen and Williams, "Innovation: Who's in Charge Here?" *Journal of Academic Librarianship*, 20, no. 3 (7/94), 167-68; Perry and Woodsworth, "Innovation and Change: Can We Learn from Corporate Models?" *Journal of Academic Librarianship* 21, no. 2 (3/95), 117-12; Zhang, "Embracing the New Technology," *College & Research Libraries*, 59, no. 4(7/98), 301-303; Drake, "Technological Innovation and Organizational Change," *Journal of Academic Librarianship* 19, no. 3-4 (1993) 39-53; Crawford, "Testing a Model of Intraorganizational Power Within Liberal Arts College Libraries," *Journal of Higher Education* 69, no. 4 (7/8, 1998), 424-96.
35. See Helen Howard, "The Relationship between Certain Organizational Variables and the Rate of Innovation in Selected University Libraries" (Ph.D. Dissertation, Rutgers University 1977). Howard uses the above as the basis for "Organizational Structure and Innovation in Academic Libraries" *College & Research Libraries*, 40, no. 4 (9/81), 425-34.
36. *Ibid.*, 53. "Despite all the research on innovation there continues to be a lack of conceptual clarity and little consensus about its exact meaning."
37. *Ibid.*, 54. Howard here refers to Everett Rodgers and F. Floyd Shoemaker, *Communication of Innovations: A Cross-Cultural Approach*. (New York: Free Press, 1971).
38. *Ibid.*, 59. In this case, Howard relies on Knight, "A Descriptive Model of the Intra-Firm Innovation Process," *Journal of Business* 40, no. 4 (10/67), 478-96.
39. And this is the reason why, even when Howard moves to a discussion of organizational structural variables (i.e., complexity, centralization, formalization, and stratification), the argument does not go beyond a hierarchical model of organizational structure. See Howard, "The Relationship between Certain Organizational Variables and the Rate of Innovation in Selected University Libraries."
40. Niklas Luhmann, *Gesellschaftsstruktur und Semantik*, vol. 1, (Frankfurt a. Main: Suhrkamp Verlag, 1990), 23.
41. *Ibid.* Translated from the German: "kann nicht spontan in jedem Moment wieder von neuem begonnen werden."
42. *Ibid.*, 23f. Translated from the German: "bestimmte Selektionslinien wahrscheinlicher machen als andere, Sensibilitäten in bestimmten Richtungen verfeinern und in andere abstumpfen."

Who said LAMAs are not social animals?

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