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A Review of Value-Added Centers: Objectives, Structures, Staffing, and Funding

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Value-added centers have been established in many states. These centers vary greatly in objectives, operational structures, staffing, and funding. This paper uses examples of several centers and programs, with a specific emphasis on three centers, to provide a better understanding of value-added centers and their operations.

Key Words: agribusiness, multidisciplinary, planning, value-added

JEL Classifications: L3, O1, Q0

Value-added centers have cropped up across the United States in the past two decades with increased frequency and attention in the last 10 years. The historical justifications for and objectives of different value-added centers vary as much as their operational structure, staffing, and funding. This paper is not meant to be a treatise on the development of a value-added center, nor is it meant to be all-inclusive. Rather, it highlights different execution models for value-added centers by directly comparing three such centers and incorporating examples of other centers or programs where appropriate. The three primary entities compared and contrasted in this paper are associated with the “three OSUs”: Oklahoma State University’s Food & Agricultural Products Center, Oregon State University’s Food Innovation Center, and the

Ohio State University’s Heartland Agdeavor Association.

Historical Justification for Value-Added Centers and Programs

Many early value-added centers and food industry programs stemmed from the “agricultural depression” of the late 1970s and early 1980s, and today serve as examples of successes, failures, and reorganizations (Foster; Woods and Hoagland). State-designed assistance programs such as North Dakota’s Agricultural Products Utilization Commission (APUC) and Minnesota’s Agricultural Utilization Research Institute (AURI), both designed to help producers determine the feasibility of value-added ventures, continue to provide information and/or financial support for value-added business development (Woods and Hoagland). Some of the early value-added centers, such as Kansas State University’s Kansas Value-Added Center, eventually came under the control of state agencies and became a business service, i.e., the Agricultural Value-Added Center of the Kansas Department of Commerce. Others, such as the Food Processing Center at the University of Nebraska, retained their original focus to use existing

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university facilities and designated staff (as opposed to faculty) and to this day serve as fee-based service providers for industry and entrepreneurs. Some, such as the Food & Fiber Center at Mississippi State University, provided their states with decades of agribusiness development projects and industry technical assistance but were eventually dissolved so that resources could be reallocated to meet revised university goals.

In the late 1980s and early 1990s, the United States saw the rapid expansion of private and government (both state and federal) efforts related to “value added” agriculture. The development of new generation cooperatives (NGCs) and vertical integration efforts by producers created a surge in producer-owned food, fiber, and bioenergy ventures that has continued to the present day (Barton; Cook; Holcomb and Kenkel). Marketing programs utilized by NGCs and other producer-owned entities emphasize the wholesome image and values associated with agricultural producers and agriculture in general while also touting the benefits of developing these value-added activities to keep producers on the farm and ranch. The swell in popularity of such efforts made “value-added” a key phrase in many activities and programs at both the federal level (e.g., U.S. Department of Agriculture [(USDA)]) and to varying degrees at the state level (state departments of agriculture, land grant universities).

In response to the growing popularity of value-added efforts, some universities created centers that brought both faculty and staff from a variety of disciplines together under one roof to provide technical services to industry and entrepreneurs (i.e., both fee-based services and publicly available extension and outreach assistance) while also pursuing longer-term research programs related to product, process, and technology development. Examples of these types of centers include the Food & Agricultural Products Center (FAPC) associated with Oklahoma State University and Oregon’s Food Innovation Center (FIC)—a joint program by the Oregon Department of Agriculture and Oregon State University. Other institutions, most

notably the Ohio State University, envisioned the pursuit of value-added ideas through the development of a nonuniversity entity for the explicit purpose of helping both producers and nonproducers identify and develop technologically and economically feasible value-added ventures on a regional scale. The resulting entity was Heartland Agdeavor Association (HAA).

The wave of interest in value-added centers even made its way into the 2002 Farm Bill with seed funding availability for Ag Innovation Centers (AICs), which required partnering between the land grant universities with their respective state agriculture departments and representatives of commodity and producer organizations in those states to provide technical and development assistance for value-added efforts (AgMRC). Of the 10 AICs funded, examples include the Agriculture Innovation and Commercialization Center at Purdue University, Michigan State University’s Product Center for Agriculture and Natural Resources, Kansas State University’s Kansas AgriFoods Innovations, and the New York Agricultural Innovation Center at Cornell University. Other value-added centers, such as the Kentucky Center for Agriculture and Rural Development (KCARD), also received USDA funds to help their development, but from the USDA Rural Cooperative Development Grant program (Kentucky Center for Cooperative Development). The greatest distinguishing characteristic between KCARD and any of the AICs is that KCARD has a much greater emphasis on producer-owned cooperatives as the vehicle to support and pursue value-added ideas.

Objectives of Value-Added Centers

“Value-added” and “agribusiness” were already receiving greater emphasis in the agricultural colleges and agricultural economics programs of many land grant universities by the mid-1990s, and university administrators were both embracing the concepts and pursuing further transformation of the land grant system to have greater emphasis on nonproduction agribusiness activities. Meyer pointed

out that this transformation of the land grant system was predicated on the universities gaining a better understanding of the beneficiaries of mission-oriented programs for both the present and the future, and that the clientele and/or stakeholders and their needs were changing at a pace much faster than the university system. Foster et al. in "The Extension System: A Vision for the 21st Century" suggest that the land grant system needs to increase its ability to focus on communities (as opposed to producers or agricultural groups) and their development, efficiently create (or learn) and transfer technology to promote community development, and, where possible, develop fee-based programs for services. Foster et al. also states that community development creates the need for assistance from a multitude of disciplines, from business to the physical sciences. The points made by Meyer and Foster et al. are in large part what the planners of value-added centers in the 1990s considered when defining the mission and objectives of a center.

There are many possible reasons why a state and/or university may wish to establish a value-added center. However, the overall objectives of value-added centers over the past two decades essentially fall into one (or a combination) of three categories:

1. Support value-added efforts by agricultural producers
2. Promote and expand academia–industry collaborations
3. Support rural economic development

Centers with the primary objective of helping state and regional agricultural producers forward integrate from production into processing and marketing often focus on assistance with feasibility evaluation, business planning, and marketing. These value-added centers may have been given the monikers "cooperative development centers" (e.g., the Kentucky Center for Cooperative Development), "sustainable agriculture centers" (e.g., the Tennessee Center for Sustainable Agriculture), or "alternative agriculture centers," but their primary focus is on identifying economically viable alternatives for producers. Such

centers are often primarily or fully operated by state agribusiness extension specialists, either designated staff or faculty with appointments in an agricultural economics or agribusiness department.

Although its staffing and structure differ from those of many value-added centers with this overall objective, HAA falls into this category of helping producers vertically integrate as its primary objective. HAA supports producers and the broader agribusiness community by finding value-added efforts to invest their resources. This effort doesn't preclude members from individual or non-HAA vertical integration efforts, rather it opens the door to include a mentality of broader diversification. Unlike many value-added centers associated with land-grant universities, HAA is not geographically limited to examining ideas within a specific state. While HAA has its roots in Ohio (the main office is in Columbus, OH), the association focuses on value-added opportunities throughout the Eastern Corn Belt region, which in addition to Ohio includes West Virginia, Indiana, Kentucky, Michigan, and western Pennsylvania (Heartland Agdeavor Association).

Centers with a primary focus on academia–industry collaborations may have been established because the land grant university identified opportunities to leverage these relationships and bolster research, outreach, and teaching. By helping the food and fiber industry members with technical assistance and applied research, state supporters of this model (e.g., legislators) hope to bolster the competitiveness of their value-added industry. The desire to increase technology transfer of intellectual property developed from university-based research plays strongly into this model. Centers formed around such goals typically have multidisciplinary faculty in addition to designated staff, operate in conjunction with a food science (or forestry or fiber) department or program at a university, and heavily emphasize both technical assistance to and research collaborations with industry members. The FAPC and FIC focus on these collaborations, but earlier programs

such as the Food Industry Institute at Michigan State University are also good examples of centers with academia–industry collaborations as a primary objective (Day-vault and Tilley; Foster).

Value-added activities are often deemed the most probable way of generating rural economic development, regardless of whether those activities are associated with vertical integration by producer groups (Cook; Barton; Egerstrom; Holcomb and Kenkel), assisting entrepreneurs with value-added business development (Henderson; Lichtenstein and Lyons), or attracting and retaining food or fiber businesses (Holcomb, Flores-Bastidas, and Woods; USDA-ERS). Centers with rural development as a primary objective specialize in business development assistance as opposed to multidisciplinary research and may be tied with state departments of agriculture or commerce, or possibly with nongovernment entities working in the area of agriculture and economic development. Examples include Iowa's Rural Economic Value-Added Mentoring Program (REVAMP) and the University of Georgia's Center for Agribusiness and Rural Development.

Objectives are largely determined by the economic and political climate of the geographic location in which the center was formed, guided by the perceived needs of the state or region for the foreseeable future. For example, KCARD/Kentucky Center for Cooperative Development (KCCD) early on committed a large portion of its resources (obtained from both state and federal sources) to identifying high-value crop alternatives and cooperative marketing activities for tobacco producers as they shifted acres out of tobacco production (Kentucky Center for Cooperative Development). Conversely, Oklahoma's FAPC was originally developed to identify, develop, and attract value-added processing opportunities for the state's existing agricultural commodities (Gilliland). Oklahoma's top commodities are livestock (cattle, swine, and poultry) and wheat, yet with the exception of swine, a vast majority of these commodities are processed outside of the state. Value-added processing of alternative crops, while

a primary justification for KCARD/KCCD, was originally a secondary objective for the FAPC.

Operational Structures of Value-Added Centers

Value-added centers take on many different forms in terms of organization, oversight, and even location. For example, the FAPC is located on the Oklahoma State University campus in Stillwater, OK, while the FIC is located in Portland, OR, roughly 90 miles from the Oregon State University campus in Corvallis, OR. The FAPC is a university-based program operated by university faculty and staff. The FIC is a joint program between the university and state government. Then there is the HAA, formed as a not-for-profit corporation with the Ohio State University as one of its political subdivisions and operated from a central office in Columbus, OH.

The FAPC operates as a stand-alone entity with facilities to support research and technical assistance for practically any food product and many nonfood agricultural products: USDA-FSIS inspected meat harvesting and further processing facilities, FDA inspected nonmeat processing rooms (e.g., milling, baking, fruit and vegetable processing, fermentation, oilseed processing), temperature-controlled storage areas, loading and unloading docks and bays, wood processing facilities, laboratories for FAPC scientists, and a sensory testing area for food products. The FAPC director has the same administrative status as a department head in the university hierarchy, although unlike other department heads the FAPC and its director have no teaching component. The FAPC utilizes university services and systems for the administration of grants and contracts, maintenance and repairs, accounting, intellectual property protection, and even vehicle maintenance. While the availability of these services is a benefit for an on-campus center, the FAPC realized early difficulties fitting in with the university structure because of the center's multidisciplinary nature and the uniqueness of its academia–industry collaborations.

Oversight for the FAPC ultimately rests with the OSU Vice-President in charge of the Division of Agricultural Sciences and Natural Resources (DASNR). An Industry Advisory Committee with members appointed by the governor, leaders of the Oklahoma House and Senate, and the vice-president of DASNR provides direction for the FAPC and feedback to the legislature (Wilson et al.). The FAPC maintains a multidisciplinary, team-based approach to technical assistance projects, i.e., for any given project a combination of faculty and staff members with different specializations may be involved, and faculty members carry out research programs in conjunction with the goals and objectives of the FAPC, their home departments, and DASNR.

The FIC opened in 1999 to create a "collaborative atmosphere between government, higher education, and the private sector to aid in the development, packaging and marketing of food products throughout the world." (Andrews). The mission of the FIC, as identified by a panel of university and state agency representatives is to foster the success of food and agricultural enterprises and advance the food industry of the Northwest. The manifestation of the FIC was the building of a 33,000 ft² facility in downtown Portland, OR, that contains offices, meeting rooms, and laboratories. The building houses a multidisciplinary crew of faculty and staff from Oregon State University, and the Oregon Department of Agriculture's Agricultural Development and Marketing Division and Lab Services Division.

The director of FIC was planned to be a shared expense between the university and the state agriculture department, and the position was to have responsibilities for the building, the joint efforts, and strategic direction (Witters). Originally, the director was slated to have an annual, fixed term appointment to operate the facility and manage programs. These plans were changed to include joint leadership shared with OSU and ODA administrators, and the position of director was eliminated. The original plans also called for the guidance of an advisory team composed of industry members, but to

date the advisory council has not been established. The FIC's available services were in large part determined by a 1994 survey of food industry members that ascertained the current and expected future needs for food manufacturers and marketers in the Northwest, and like the FAPC, the FIC provides business development assistance, technical assistance, and forms multidisciplinary teams when necessary to meet the needs of clients.

Extensive effort was made to determine how the synergies between the university and the state agriculture department would be realized, even as the building was being built (Wells). This effort continued on into the operation of the facility as the university and the state agriculture department wrestled with issues such as the determination of which computer system to use (university or state agency). The plans for the FIC called for the entity to be a shared facility, with funding, personnel, and oversight provided by both Oregon State University's College of Agricultural Sciences (CAS) and the Oregon Department of Agriculture. Oregon State University provides the applied research expertise in market economics, business management, and sensory science with three tenure track faculty. In addition, the FIC employs professional staff in packaging engineering, food science and product development, and process engineering. ODA, on the other hand, provides specialists in agricultural marketing, as well as analytical laboratory services.

Heartland Agdeavor Association (HAA), a nonprofit corporation "that enhances farm income by providing investment opportunities in businesses that add value to agricultural commodities" (Heartland Agdeavor Association), is an example of a broad-based value-added organization in which a land-grant university is a partner with nonacademic associations and industry members. The Ohio State University, one of HAA's founding political subdivisions, viewed the concept as a collaborative means of pursuing value-added agricultural development via a separate legal entity focused on rural economic development. Being legally detached from the university has allowed HAA to respond to apparent

value-added opportunities without having to adhere to academic protocols typically associated with research and/or extension programs. Furthermore, the nature of HAA allows it to transcend the geographic limitations often faced by strictly academic centers or those designed and funded for state-specific purposes.

HAA is composed of individuals, corporations, associations, and agencies that have as their collective goals the identification and evaluation of investment opportunities for agricultural producers and others who might benefit from value-added agriculture and food processing activities. HAA is controlled by a board composed of (currently) 14 representatives from member institutions and individual agricultural producers, and business activities are overseen by a chief operating officer (Heartland Agdeavor Association).

Staffing Models for Value-Added Centers

Value-added centers have a variety of staffing models, but the most common is a combination of university faculty and state specialists. Nonfaculty staff may be 100% extension specialists, combination research and/or extension positions within a university but tied solely to the center, or representatives of state (nonuniversity) agencies. Having tenure-track faculty in a value-added center increases the expectations of research and outreach objectivity and credibility, but also brings its own set of issues related to the level of interaction with departmental colleagues, the perceived value of scholarly work among peers, and ultimately promotion and tenure. If a center's outreach and technical assistance activities are new additions to extension programming, the merit awarded to such efforts may suffer because of the lack of understanding and appreciation for the efforts using existing evaluation procedures. Additionally, research and other scholarly activities by a faculty member may suffer if the needs of the center's collective clientele require a greater level of extension activity than indicated by that faculty member's appointment.

The FAPC houses a combination of faculty from a broad array of disciplines, each with a corresponding departmental appointment in the university, and professional staff members solely responsible to the FAPC director. Although located on campus with their colleagues, faculty members do not maintain offices within their respective departments. With few exceptions, the faculty members have varying levels of research and extension split appointments with no teaching requirements so that they can be more mobile and responsive to industry needs (Gilliland; Wilson et al.). Faculty members consist of the director, an agricultural economist, an oilseed chemist, a cereal chemist, a meat scientist, a horticultural products scientist, two food microbiologists, and two food engineers. The FAPC professional staff members likewise have research and extension appointments and consist of four business and marketing specialists, an analytical chemist, a quality management specialist, a food scientist and/or sensory specialist, a meat plant manager, a pilot plant manager, a food microbiologist, and a communications specialist.

In regards to staff structure, Oregon's FIC shares many things in common with the FAPC. The FIC has a multidisciplinary, team-based focus for helping food business and food startups. This team includes marketing managers from the Oregon Department of Agriculture's Agricultural Development and Marketing Division. Oregon State University staffs the building with sensory scientists (one faculty and one staff), management and marketing faculty (two agricultural economist faculty members), product and process development specialists (two professional staff), and packaging and processing engineers (one faculty and one professional staff). Faculty members have research and extension split appointments as well (Andrews; Witters).

For both the FAPC and the FIC, the faculty members face the same reappointment, tenure, and promotion standards as colleagues in their respective departments. For both centers, plans call for these faculty members to be fully absorbed into their respective departments in the event of center dissolution.

Staff positions are more expendable, but most staff would be reassigned where possible in the event of center failure. This is the model followed by Mississippi State University upon the dissolution of the Food & Fiber Center.

Unlike the "public good" models of the FAPC and the FIC, HAA operates much more like a pure business service with minimal staffing. The operations of HAA are overseen by a chief operating officer. When a value-added opportunity is identified by HAA members or staff, the staff will pursue information related to the idea. Detailed development activities such as feasibility assessments and business planning are typically contracted with knowledgeable experts in the area of interest. HAA's staff also provides information to its members on value-added ideas, investment opportunities, and provides contacts for entrepreneurs wishing to find venture capital for an idea.

Funding Models for Value-Added Centers

Critical to the longevity of a value-added center are the funding source(s) and budget guidelines identified in its business model. Startup funding may be provided through state sources (legislature, university, state agencies), or even through USDA programs such as the Rural Cooperative Development Grants and Ag Innovation Center programs, assuming that the objectives of the center and the political climate of the state and region fit the requirements of these programs. However, the greater issue for value-added centers is long-term funding. The three highlighted programs are a study in contrast of how value-added centers can be funded. One is almost entirely state supported, one is intended to be self-supporting with limited initial state investment, and one is solely funded by membership dues and grants.

The FAPC operates as a state-supported facility by design of the state legislature, which authorized the center by statute to occasionally subsidize the costs related to business development projects pursued by entrepreneurs who cannot afford to pay all associated FAPC fees (Wilson et al.). Annual state

funding comes via a separate budget line item from the university, but the funds are channeled through the Oklahoma Agricultural Experiment Station and the Oklahoma Cooperative Extension Service to ensure maintenance of the FAPC's research-extension split. Additionally, the FAPC generates funding to pay for expenses and "soft money" staff through the pursuit of competitive grants, contracted projects with large food and fiber processors, fees for technical services provided to large and small processors, and fees from conferences, workshops, and training programs provided for various segments of the food and fiber industry in Oklahoma. However, the state mandated that the FAPC would not become the low-cost provider of such services to the detriment of existing state service providers (e.g., laboratories, copackers, etc.). Because a majority of the FAPC funding comes directly from the state, the center performs occasional impact assessments to show the value of the state's investment in the FAPC. The results of these assessments are presented by the Industrial Advisory Committee in their annual report to the state legislature (Ulmer et al.).

In contrast to the FAPC, the FIC has two entities with separate budgets. The Lab Services Division and ADMD are state funded programs with no expectation of generating fees or other revenues from the work they perform. Oregon State University, on the other hand, has the expectation that the services offered by the College of Agricultural Sciences contingency will be able to generate enough funds to sustain the program on into the future. The fiscal model to date is to provide initial support dollars for staff, faculty, and facilities, with progressively declining support, to the point that the program is responsible for generating the majority of its operating funds through client services and competitive grants (Andrews; Wells; Witters).

The primary source of funding for HAA is membership dues. Members of HAA fall into three categories: producers, partners, and affiliates. Producers are agricultural producers, who each pay a one-time \$800 initiation fee (payable over three years) and annual dues

of \$200 to maintain their HAA membership. Partners include profit and return-generating entities (e.g., farmer cooperatives, agribusiness firms), and not-for-profit firms and associations closely aligned with agriculture (e.g., producer associations), which also pay membership fees. Affiliates are "public or quasi-governmental organizations, professional societies, universities, and individuals that are not farmers," such as the Ohio State University and USDA Rural Development, and nonproducer individuals (Heartland Agdeavor Association). Nonproducer individuals do not receive the same priority for value-added investment opportunities as do producers, but all have opportunities to become involved in value-added activities identified and developed by HAA.

Like the FAPC and the FIC, HAA also pursues grant funding to support its activities and derives revenue from intellectual property. As with any value-added center, HAA has a keen interest in new food and fiber technologies. For a given idea, HAA may buy a patented technology or help a newly formed entity enter into a licensing agreement with a patent holder. Alternatively, HAA may even become the coowner of a patented technology developed as part of the venture creation process. HAA is currently involved in a number of ethanol and biodiesel efforts, identity preserved (IP) programs for food grade soybeans (most notably SoyLink), and concepts such as wheat straw building panels and egg processing where intellectual property may generate revenue for the organization (Heartland Agdeavor Association).

Summary and Conclusions

Value-added centers come in many forms and are shaped according to the objectives of their planners, the structure and staffing hierarchy that can best utilize available resources to meet these objectives, and the funding sources available for both start-up and continuity of the organization. The past three decades have shown that value-added centers either hold to their original mission and thrive, cling to their original objectives and structure and dissolve,

or morph to fit the changing political environment in which they operate and provide the services requested by stakeholders.

Center objectives in large part determine the appropriate structure and staffing models. A review of former and existing centers suggests that those with a focus on rural economic development and producer-owned processing and marketing ventures generally gravitate toward a business development model with little or no new facility development and a staff composed of extension agribusiness specialists. Conversely, those with a focus on academia-industry collaborations and new product and process development will often require the creation of designated processing and laboratory facilities and utilize a multidisciplinary staff.

Many value-added centers are associated with a land grant university for the purposes of instant recognition, perceived credibility, objectivity of research, and availability of existing facilities and resources. However, these centers face their own particular set of challenges. University support systems typically do not adapt to new programs very well, and their administrative and support departments (e.g., grants and contracts, accounting, intellectual property, and even maintenance) may not operate at the speed necessary to facilitate industry collaborations and expectations of quick project turn-around. If the center's goals do not closely match the goals and objectives of departments and colleges at the university, faculty may find it difficult to meet both the demands of center clientele and the standards of scholarship required of colleagues in their home departments for promotion and tenure. In such cases, it is suggested that planners determine appropriate faculty appointments (research, extension, teaching splits) for each position and have definitions for scholarship and scholarly activities in place prior to establishing the center itself.

Funding models likewise need to fit the objectives of the center. If a center is expected to operate as a public service, open to any and all citizens of a state or region, then a state-supported model is justifiable. If the center is

expected to generate most or all of its funding through fee-based services and programs, then the planners of the center should not limit the scope of the facility to be state specific in nature or include many university faculty in its budget. If the center is expected to be completely self-sufficient from the start and using grant funding only to promote specific programs or areas of interest, then a small but quick-acting and efficient business development entity funded by participating members (e.g., HAA) is probably the most logical model.

Seed funding from federal sources may fit into the funding models of some value-added centers, but the agricultural and political climate of a state may not be commensurate with federal programs. For example, a USDA Rural Business Development Grant may be a good fit for a center with the primary objective of helping small producers of niche commodities and horticultural products forward integrate into processing and marketing. On the other hand, such a grant may actually be a limitation for a center hoping to leverage collaborations with existing industry to advance technology and intellectual property development. Similarly, Ag Innovation Center funding may help establish value-added centers in states where the most produced commodities complement each other in crop rotation programs and the largest producer organizations are also the growers associations for those commodities. However, obtaining that funding source may not be possible for centers in states where the primary commodities are fierce competitors for both resources and consumers (e.g., cattlemen and poultry growers) and where the state's largest producer organizations are not likely to work together because of philosophical differences or their competitive nature.

In all, as "value added" continues to maintain its significance to land grant universities, rural development organizations, and agricultural producers, value-added centers will be around. Fortunately, there now exists a case history of value-added centers to be incorporated in the plans for their establishment, operation, reorganization, and, if necessary, their dissolution.

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