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## SURVEY OF LEADING BUSINESS MODELS OF TIMBERLAND INVESTMENT MANAGERS

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## Introduction

Twenty six years ago, the first institutional timberland investment was originated. This unique transaction set in motion the evolution of a new investment asset class and triggered the emergence of the professional timberland investment management organization (“TIMO”). As institutional appetite for timberland ownership has accelerated in recent years, the TIMO industry has rapidly expanded to meet demand, deploying four distinct business models to execute an increasingly complex set of management responsibilities. These independent business models are primarily distinguished by a firm’s decisions regarding the insourcing and outsourcing of organizational tasks; choices that not only impact organizational structure, but also materially affect cost structure, and ultimately, investment performance.

The discussion that follows will explore the history of institutional timberland investments, the development of the TIMO industry, the various business models utilized, the broad scope of management responsibilities accompanying this unique asset class, and the increasingly complex set of execution decisions around these responsibilities. The pros and cons of different approaches will be examined and key distinctions of the four primary business models highlighted. The objective of this assessment is to offer a deeper understanding of the various approaches used to manage timberland assets and the potential costs/benefits inherent in each approach.

## History of Timberland Management

The first institutional timberland investment occurred in 1981. At that time, timberland was primarily held by forest product companies and private landowners. The breakdown in ownership is illustrated in Figure 1 below:

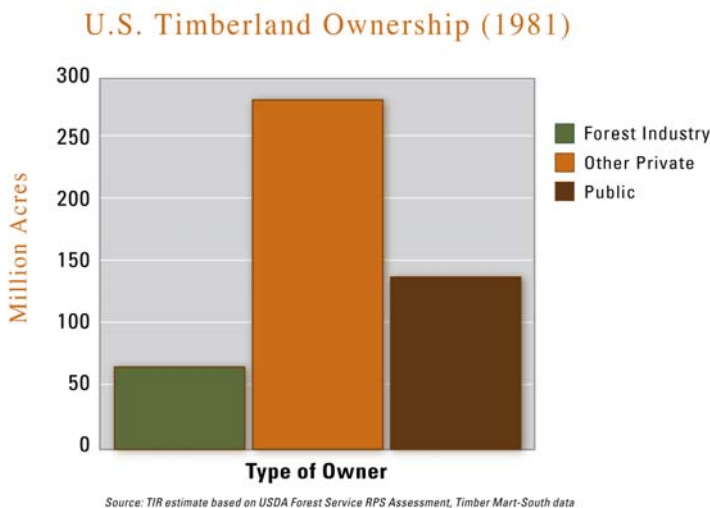


Figure 1. US timberland ownership by owner type.



Forest product companies typically insourced activities related to timberland management, demonstrating varying levels of commitment to the scientific research and infrastructure required to effectively acquire and actively manage timber furnished to their mills. The depth of a company's timberland management division was a function of management philosophy, and to a certain extent, the financial wherewithal of that company to make investments in an asset with a long-term payback period.

The other primary owners of commercial timberland, private individual landowners, also varied in their commitment to effectively manage timberland holdings. Larger landowners were more likely to make greater investments in timber management due to economies of scale, while smaller landowners were more likely to passively manage properties. Active private timberland owners typically acquired free specialized expertise and advice from state sponsored cooperatives, or outsourced forestry management activities to forestry consulting firms. The consulting firms provided a range of services, but overwhelmingly, relied on commission income from conducting closed bid timber auctions for land owners once the landowner made a decision to sell timber. In this regard, these firms typically conducted timber inventories, prepared sale packages and distributed the packages to prospective timber buyers on behalf of the private landowner.

In the early 1980s, when the first timberland investments were made for institutional investors, forestry consulting firms were retained by the early TIMOs to assist them in acquiring, managing and disposing of timber and timberland assets. These firms were hired for their regional expertise and ability to physically access properties to perform the day-to-day property management oversight responsibilities for the TIMOs. In most cases, the consultants possessed management capabilities, but these skills tended to be limited due to the historically less rigorous demands of private individual landowners, their primary customers until the mid-1980's. TIMOs, on the other hand, were more demanding, and forestry consulting firms responded by providing other value added services such as acquisition sourcing, accounting and reporting services, property tax administration, hunting lease administration and a variety of other decision support and management related services. These services were typically charged on an hourly or per acre basis, with both the nature and the source of revenues changing over time for the forestry consulting firms.

As the industry began to mature, some traditional forestry consulting firms decided to abandon their traditional "fee for services" model, build portfolio management capabilities and promote themselves as discretionary managers of timberland investments. In other instances, TIMOs that had historically outsourced property management activities to third-party consulting firms decided to insource the property management services and become **Vertically Integrated**. In both cases, these TIMOs typically charge an asset management fee and pass along property management services "at cost". Other portfolio managers entered contractual relationships with third-party consulting firms, relying on the consulting firms to varying degrees depending on a range of factors including management philosophy and desire to shift both costs and responsibilities to third-parties. The managers that have chosen to outsource most major functions are essentially serving as **Contractor-based** managers while others have created a supervisory layer within their firm to more actively manage the outsourced functions; these are referred to as **Hybrid** managers. A variation of the **Hybrid** model is the **Horizontally Integrated** model. It differs from the Hybrid model, in that decision making and decision support for real estate, economic research, biometric research and accounting are all insourced.

The organizational structures among the four types of managers differ rather dramatically. The operating costs borne by the manager and the investor also vary significantly.



### Contactor-Based Model

This is the baseline Model. For **Contractor-based** structures, there are typically three key functions: a leadership function, such as a Chief Investment Officer; a Portfolio Management role, which coordinates outsourced research and management functions; and a Finance and Accounting function that coordinates the accounting and reporting function which is typically performed by a third-party. This model most closely resembles a traditional equity manager, where a manager constructs a portfolio to achieve a desired risk and return objective for the investor. Performance of the underlying companies is in the hands of the “operators”, where the manager is buying a business (timberland property) and trusting the management team (forestry consulting firm) to maximize the opportunity.

### Vertically Integrated

In addition to portfolio management capabilities, **Vertically Integrated** models typically have a separate subsidiary that provides the day-to-day management services for the properties. This subsidiary has a separate management structure that is responsible for directing and implementing the management of the properties. The costs for these services are normally charged to the investor “at cost”. Though a firm may be vertically integrated, it may outsource some functions due to geographical, technological or skill constraints. The extent to which third-party services are utilized will depend on the organization, the location and character of the portfolios it manages and the desire of the firm to manage costs and liabilities. This model most closely resembles an integrated operating company.

### Hybrid

The **Hybrid** model differs from the **Contractor-based** model in that there is typically an additional layer of management imbedded in the TIMO that is dedicated to supervising and managing the third-party property management, research and real estate firms. This function is typically referred to as a Regional Forester. Unlike the **Vertically Integrated** model, the day-to-day forest operations and in some cases, management decision making and decision support, are outsourced to third-party firms. This model most closely resembles an early stage venture capital manager, with a more “hands on” role in the activities of the investment companies (timberland properties).

### Horizontally Integrated

The **Horizontally Integrated** model is focused on building internal expertise in key decision support functions that are believed to be important in determining the performance of a timberland investment. Unlike **Hybrid** managers that outsource one or more of the following functions, these functions are typically performed in-house.

1. **Economic Research** - Research conducted by an in-house Forest Economist which provides insight on global, domestic and regional timber (and land) market supply and demand factors that influence timber and land prices
2. **Biometric Research** – Research and Decision Support led by an in-house Forest Biometrician to improve the accuracy of inventories, valuations, management plans and maximize the economic value of timber through growth and yield modeling and optimal harvest scheduling.



3. **Real Estate Management** – Real estate management to identify, manage or position higher and better use real estate properties to improve the valuation and maximize the economic value of these type of properties.
4. **Accounting and Reporting** - Accounting to manage accounting and tax related data at the property, portfolio and entity level to facilitate decision making and client reporting.

Despite the broad set of specialized skills that are insourced with the **Horizontally Integrated** model, non-decision making and non-decision support functions are outsourced to third-parties (typically local professionals). The **Horizontally Integrated** model most resembles a typical later stage private equity firm where skills and talent are assembled to identify properties that have overlooked intrinsic value. Once properties are acquired, these skills are then used to develop and execute individual “business plans” for each property. This model is in contrast to the **Vertically Integrated** model where non-decision making roles can be insourced within the context of an organization that typically resembles an operating company as opposed to a private equity firm.

## Management Activities

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Critical activities that have a direct bearing on performance results are either performed by managers or outsourced to third-parties. Skills, technology and techniques applied to these functions can meaningfully differ among managers or third-party firms that perform these functions for the manager. A general list of these functions can be found in Table 1 below, and the relative level of insourcing versus outsourcing of these activities by business model is highlighted in Table 2.



**Table 1. List of Key Management Activities Performed by Managers or Third-Parties**

	CATEGORY	ACTIVITY	DESCRIPTION
Acquisition	Acquisition	Sourcing	Developing acquisition opportunities by maintaining a proprietary network of sellers, brokers, and other third-parties that will lead to acquisitions opportunities.
	Acquisition	Negotiating and Deal Structuring	Ability to negotiate the comprehensive terms of an acquisition, from price to financing structures to modeling the effects of different structures on the timing of cash flows. This aspect of the underwriting process involves establishing terms of long-term fiber supply agreements.
	Acquisition	Valuation and Analysis	Obtaining and analyzing the comprehensive data that is required to model the investment performance of a portfolio over a given time horizon including development of a harvest schedule, a land disposition program, and estimates of timber prices and operational costs over the investment term.
Management	Management	Inventory Design	Development, supervision, and execution of a sampling design that is appropriate for the subject property and provides that most effective inventory of standing timber which will be used to establish a spot price for the timber, a basis for modeling the long-term growth and yield of the timber and determining the harvest schedule for the timber over the investment time horizon.
	Management	Timber and land Management Plans	Development of detailed management plans that will be used in the day-to-day management and harvesting of timber stands. These plans contain specifics regarding the timing of harvests and the details supporting management regimes for individual stands. An example could be that a stand should be thinned and fertilized in year 15 and harvested in year 18. For timberland properties that have higher-and-better-use real estate potential, these plans may include details about aesthetic improvements or harvesting regimes that will better position the properties for sale to targeted buyers.
	Management	Property Management	Providing the day-to-day oversight of the property and directly supervising the implementation of management regimes (e.g., fertilization) designed to maximize the biological growth potential of the timber. Property management will also include implementation of risk management plans for the properties.
	Management	Property Data Management	Ensuring access to timely and accurate data about the property to make on-going investment decisions. Major decision support data includes mapping and stand data such as the timber inventory, growth and yield potential of the stands and harvest schedule plans.
Dispositions	Dispositions	Timber Sales	Involves the marketing and sales of standing or cut timber to potential buyers.
	Dispositions	Timberland Sales	Involves the final disposition of timberland (land and timber combined). This does not include timberland with higher-and-better use (HBU) potential that may be sold into either the recreational or real estate markets.
	Dispositions	Timberland HBU Sales	Refers to marketing and selling traditional timberland holdings that have converted to a category (e.g., recreational, residential or commercial) that has values beyond traditional timberland.
Accounting & Reporting	Accounting & Reporting	Property Level Accounting	Accounting for expenses and revenues at the property level which will be used in the budgeting, reporting and tax administration.
	Accounting & Reporting	Client and Tax Reporting	Producing the quarterly and annual financial reports as well as tax reporting for properties and portfolios.



**Table 2. Typical insourced versus outsourced functions by business model.**

	CATEGORY	ACTIVITY	Model Comparison:			
			Horizontally Integrated	Vertically Integrated	Hybrid	Contractor-Based
Acquisition	Acquisition	Sourcing				
	Acquisition	Negotiating and Deal Structuring				
	Acquisition	Valuation and Analysis				
Management	Management	Inventory Design				
	Management	Timber and Land Management Plans				
	Management	Property Management				
	Management	Property Data Management				
Dispositions	Dispositions	Timber Sales				
	Dispositions	Timberland Sales				
	Dispositions	Timberland HBU Sales				
Accounting & Reporting	Accounting & Reporting	Property Level Accounting				
	Accounting & Reporting	Client and Tax Reporting				

Most in-sourced ← → Most outsourced



## **Business Model Comparative Assessment**

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No single business model *a priori* is optimal. That is not to say, however, that they are equivalent or that the choice of model does not impact timberland investment performance. Each model has a unique set of characteristics that can offer competitive advantages or disadvantages for a given investment milieu. A brief assessment of the strengths and weaknesses of the four leading business models currently employed by timberland investment managers is provided below.

### ***Contractor-based***

#### Pros

- Provides greater flexibility to adjust resources to meet existing and emerging needs of the organization, both functionally and geographically. May offer an opportunity to more rapidly actively manage recently acquired properties.
- Allows for “best of breed” management, where contractors may be engaged or terminated based on services provided and quality of performance.
- Offers less opportunity for a conflict of interest in the acquisition and sale of assets. Contractors may be hired or terminated as properties are added or removed from the portfolio, eliminating the potential conflict which may occur if a TIMO has an internal forestry staff to sustain over a managed acreage base.
- Allows organizational “fixed cost” infrastructure to remain lighter than it would otherwise be if all activities are insourced.

#### Cons

- Proprietary knowledge base is sacrificed. Contractors are generally not exclusive to the individual organization and therefore the activities and services performed by this group are available to the industry. Contractors also typically conform to industry wide standards, and consequently, an organization should not expect to see enhanced investment returns through exclusive research or expertise. In other words, the contract based business model is suited for hitting “Beta” but not suited for creating sustained “Alpha”.
- Communication and information integration across autonomous entities can be a challenge. Consistency and quality control issues may arise, as each contractor has a unique operating process and methodology that must be managed.

### ***Vertically Integrated***

#### Pros

- Consistency, integration, quality control and standardization characterize the vertically integrated process. Because activities are internally controlled throughout the integration chain, opportunities for greater efficiency exist.
- Capability exists for internal research and proprietary expertise to offer a competitive advantage.





- New processes or methodologies derived from advances in forest management science may be more rapidly adopted.

#### Cons

- Potential conflict of interest between sustaining a forest management staff and disposing of properties in the best interest of the investor. There may also exist geographic or species favoritism in the acquisition process due to preexisting staffing in certain markets.
- Challenge of maintaining organizational focus on the primary drivers of performance. Internally managing an integrated process requires additional management time and effort, and may be a cause of distraction from the highest value added activities.
- Flexibility to rapidly adjust to changing resource demands is limited. This inflexibility applies to both client portfolio demands and market conditions.

#### **Hybrid Model**

The strengths and weaknesses of the hybrid business model fall between those of the contractor based model and those of the vertically integrated model.

#### Pros

- Offers better coordination and integration of the different forest management services than the contractor model. For basic services such as planting, fertilization, and remote sensing, the manager can choose the best available contractor to fulfill those needs. Higher level responsibilities such as acquisitions, harvest planning, and asset sales are internalized for better coordination and the retention of proprietary expertise.

#### Cons

- While not as acute an issue as with the vertically integrated model, the hybrid model still is open to possible conflict of interest between the need to maintain a property management staff and selling properties in the investor's best interest.
- Challenge of managing multiple specialized contractors. In a contractor based model, there typically exists a major lead contractor that manages smaller contractors for the investment property on behalf of the manager. In the hybrid model, there is no longer a head contractor responsible for supervising the supporting subcontractors. This role falls on the TIMO manager, and can be resource and time intensive.

#### **Horizontally Integrated**

#### Pros

- Offers similar advantages of the hybrid model with the additional distinction that the horizontally integrated model is designed to maximize leverage from internal research and expertise of the organization in order to gain a competitive market advantage. In other words, the structure emphasizes developing and sustaining an "alpha" to a greater extent than contractor based and hybrid business models.



### Cons

- Large fixed costs are required to develop internal alpha generating capability. Whether those costs are borne directly by the client (through higher asset management fees) or by the manager, a larger base of invested capital is required to achieve economies of scale.
- A strong link between theory and execution must exist to optimize the horizontally integrated model. Research and analysis must effectively transfer to field operations.

## **Choice of Business Model by Timberland Managers**

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Which business model a timberland investment manager may choose is based on a number of factors including:

1. **Legacy** – In the early 1980's, the first TIMOs were primarily financial services companies. Due to limitations of size and the skills resident in these firms, they were forced to outsource many management activities. In some case, much of the original structures of these firms have remained intact (and today these firm's still have some variation of the **Contractor-based** or **Hybrid** model) or have evolved based on the firms changing investment or organizational philosophy.

Another prevalent example of legacy structure is the emergence of **Vertically Integrated** firms. The majority of these firms were former forestry consulting firms that added a portfolio management function and became a TIMO. These firms had a large staff of professionals (again, similar to an operating company) and decided to retain these resources. In order to maintain these staffs and be able to compete, there was a need to charge back to clients the cost of activities performed by their staff (these costs were previously borne by TIMOs that in turn had recovered these costs as operating expenses charged to clients).

2. **Investment Philosophy** – A firm's investment or organizational philosophy can dictate a business model. An example is a firm that has moved from a **Contractor-based** to a **Vertically Integrated** model. This change occurred because the firm believed that it had achieved scale and could provide its clients the property management services that had been outsourced to third-parties more cost effectively. In this case, it created a subsidiary, hired property management professionals and began charging these services to its clients "at cost".

The development of the **Horizontally Integrated** model was also based on one firm's investment philosophy. In this case, a TIMO developed this model because it believed insourcing the additional functions not historically associated with **Vertically Integrated** or **Hybrid** models (e.g., real estate capability) would allow it to capture historically overlooked inefficiencies within the asset class.

3. **Regional Demands** - As a general statement, the more a actively managed portfolio will be, the greater impact the model will have on performance. For example, U.S. Northeastern hardwoods require relatively less timber management than U.S Southern softwoods. The management activities performed on Northeast hardwoods is minimal and as a consequence the on-going impact of these activities has relatively little impact of performance. In the case of Northeast hardwoods, performance is primarily impacted by acquisition and disposition decisions and natural (as opposed to managed) biological growth.



For international investors, returns are primarily driven by country selection (and currency exchange risk), acquisition decisions and biological growth. Land markets are less active and the depth of the timber markets are typically not as great as the US (often timber is grown to supply one or two mills at most). In these cases, emphasis is placed on hiring local expertise to ensure effective property management and importantly, mitigate risk from physical, financial and political standpoints. As a consequence, firms that invest heavily internationally would likely have more outsourced functions than regional specialists.

In any event, the model that will maximize the performance of TIMO is the model that best matches the investment style and focus of the TIMO.

## Summary

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Timberland investment is still a relatively new alternative asset class compared to other established asset classes such as real estate. Beyond compelling macroeconomic and portfolio diversification characteristics, timberland also offers the opportunity to identify and exploit inefficiencies due to the asymmetry of information and the impact of decision making throughout the timberland investment life cycle. To ensure that inefficiencies are exploited, the investment philosophy, strategy, and markets in which the manager invests should match the manager's business model. Also, certain investment regions have less rigorous management demands. In these cases, again, it becomes less important for the manager to insource decision making and decision support systems. In all cases, it is important for investors to understand the type of timberland investment strategy they plan to pursue and the impact of the different models on long-term performance and overall alignment of interests.