



Transportation National Group

Tom Li was running late. Quickly checking his watch, he entered the hotel banquet room. When he looked up, he was taken back by the scene before him.

The brightly lit room had a dank smell and was littered with dirty coffee cups and scraps of paper. Taped to the walls were dozens of flow chats, showing in detail elements of Transportation National Group's (TNG) proposed new operational design. It seemed everything from routine maintenance to the process for making morning coffee was documented on a mass of tangled diagrams that lined the room. Seated in the center of it all was a weary looking group of TNG managers, dressed in jeans and T-shirts. Hovering over them were Eric Boxma and Sandra Caukins, two principals from IDX Associates, a consulting house specializing in business process reengineering.

"Tom! Glad you made it." Sandra looked up, apparently relieved now that the burden of keeping up the group's enthusiasm was momentarily lifted from her shoulders. "The team was just joking that perhaps our big-time transportation expert couldn't find the hotel. Looks like you passed the client's first test!"

Tom let out a nervous laugh. He had indeed missed a few turns on the way to the hotel, but thought he'd best keep this little fact to himself now that he was surrounded by a bunch of hard-nosed trucking managers.

"Let me introduce you to the team," continued Sandra. Tom shook hands as Sandra talked.

This is Bob Owens, President and CEO of TNG. Carl Betts here is CFO. Carl's our chief numbers guy. Karen Walsh is one of our hot-shot, up-and-coming branch managers. She has eighteen years of branch experience and keeps us honest about life in the field. Next is Joe Reisman, COO. If you have questions

Professor Garrett van Ryzin prepared this case as the basis for class discussion rather than to illustrate either effective or ineffective handling of an administrative situation. Certain data and persons are disguised.

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about operations, ask Joe. He knows everything there is to know about how TNG runs.

Eric now stepped forward. "Hi Tom. Glad to finally meet you in person." Eric had initially contacted Tom about participating in the TNG's project. "I'll explain everything when you arrive," he had said to Tom hurriedly the night before. Tom was still waiting for an explanation.

Eric turned to the group:

Tom works for a division of IDX. He began his career as a research engineer at IBM and then received an MBA from Columbia. He started out in our transportation planning group shortly after getting his MBA. For the past five years Tom has been heavily involved in our airline operations practice. He is an expert on yield management. You know - what airlines do when they fiddle with prices and all that. From what I hear, this yield management thing is a big deal in the airlines. I thought Tom could provide some interesting input into TNG's visioning process.

Tom, why don't you go ahead and explain what you guys have been up to with the airlines. Then we can go around the table and fill you in on where we're headed. Gang, I really think there is a huge potential here to make this yield management stuff work at TNG.

Tom glanced briefly around the room. He was used to dealing with airline managers. Yield management was nearly a religion in the airline industry; no serious airline would consider operating without it. But this situation was different. TNG was a trailer leasing operation run by trucking executives, a nitty-gritty industrial services business with absolutely no history of using yield management.

Eric had mentioned the night before that this reengineering project was a great opportunity for Tom to apply yield management ideas outside the airline industry - "To unlock the hidden value in TNG's business," as Eric had put it. It all sounded good enough. Still, Tom was unsure. To start with, he knew nothing about the equipment leasing business. Also, yield management was a completely untested concept in this industry. Would it work in a business like this? If so, exactly how? From what little Tom knew from talking to Eric, TNG's business already seemed a lot different than the airline business. And what benefit, if any, might it provide? These questions floated through Tom's mind as he stood to address to the group.

Company Background

Transportation National Group was a wholly-owned, equipment leasing subsidiary of a large financial services conglomerate. TNG owned and serviced leases on a fleet of

78,000 semi-trailers¹. It operated 120 branch offices scattered throughout the U.S., Canada and Mexico. Its headquarters were located on the outskirts of Philadelphia.

Founded in 1956, TNG had established itself over the years as the market leader in providing semi-trailer leases in North America. By 1997, it had a market share of over 35%. TNG's nearest rival, Excel, had a market share of 22%. The remaining 43% of the market was highly fragmented, consisting of a large number of small, locally owned and operated firms.

TNG prided itself on having a modern fleet of equipment, the most extensive branch network in the industry and unique value-added services (**Exhibit 2**). Though equipment leasing was largely a commodity business, with customers shopping primarily on price, TNG felt its quality and convenience gave it a competitive advantage over its smaller rivals.

Trailer Leasing

Trailer leasing works essentially like an industrial version of car renting. Shippers or their agents take delivery of equipment and fill out paper work at a local branch office of a leasing company. Rates are typically quoted on a per day basis and in most cases there were no mileage charges. Optional insurance was available as well. Shippers used the equipment and then returned it, either to the issuing branch or one of the other branches in the leasing company's network in the case of a one-way lease.² The duration of leases ranged from one day to over a year. At TNG, the average lease was for 9.6 weeks. Longer-term leases typically had lower daily rates than short-term leases.

Trailer leasing had grown in popularity in North America since the mid 1980's. By using leased equipment, shippers were able to increase the flexibility of their logistics operations and reduce the need for large capital expenditures. In particular, leased trailers were essential for agricultural producers and manufacturers with highly seasonal freight flows. (**Exhibit 3**)

Trailer leasing was a highly capital intensive business. An average trailer cost about \$80,000. Those equipped with special equipment, like refrigeration units, cost significantly more. In total, TNG's fleet alone represented an investment of well over \$9 billion. Operating costs to service the fleet were a relatively small compared to the capital cost of equipment.

¹ A *semi-trailer* is the rear, cargo-carrying part of a typical tractor-trailer truck (see **Exhibit 1**). Trailers are often used as containers for freight during various stages of shipping. They also serve as a portable warehouse for freight waiting to be shipped or unloaded.

² Shippers were required to specify if they wanted a one-way lease when they originated the lease, and one-way rates were generally higher than round-trip leases. About 31% of leases at TNG were one-way.

The Trailer Leasing Market

The leased trailer market in 1997 was highly diverse. TNG's customers ranged from small local proprietorships to large multinational corporations. Heavy users of leased trailers include agricultural producers, consumer goods distributors, forest products companies, manufacturers and truckload (TL) and less-than-truckload (LTL) trucking companies. Some customers, agricultural producers and distributors for example, required leases of 2-6 months to cover peak period shipping and storage needs. Others leased for only a day or two to cover short-term shortages in their own fleet.

Demand also varied geographically and seasonally. For example, the large apple harvest in western Washington state during the Fall season generated a huge demand for trailers in the Yakima branch during October and November as growers and distributors scrambled to harvest their crops and transport them to fresh markets or cold storage facilities. In contrast, summer and winter demand at the Yakima branch were significantly lower.

Due to the highly seasonal nature of demand at many locations, market lease rates tended to vary over time. For example, average rates at the Yakima branch during peak apple harvest season were often 50-80% higher than the average rates in February. At the same time, TNG had little control over local spot rates. Unlike a consumer market, TNG's customers were professional buyers who were used to bidding one vendor against the other to obtain the lowest possible price. It was not uncommon for a customer to confront a branch manager with a lower rate from a competing leasing company and demand a discount from TNG. In such situations, a branch manager had little choice but to match a competitor's rates. As a result, TNG was essentially a price taker in most of its local markets.

Branch Operations

Leasing company branches served as storage yards, customer service centers and maintenance facilities for their local markets. At TNG, local branch managers had significant autonomy. For example, TNG branch managers had significant responsibility for staffing, customer relations and the local pricing and availability of leased equipment.

Most of a branch's operating costs were fixed, though there were some variable costs involved in servicing leases and cleaning and repairing returned equipment. **Exhibit 4** provides a breakdown of costs for a typical branch.

Branch managers reported to six regional managers. These regional managers, in turn, reported to Joe Reisman, COO. Regional managers were responsible for general administration and annual budgeting for their branches. They also coordinated lease rates and reallocation of equipment within their regions. Regional managers also negotiated among themselves to correct any long-term imbalances in equipment that arose due to major one-way seasonal flows.

Pricing and Allocation Decisions

Rates at TNG were set based on the type of equipment, the duration of the lease, the branch location, the time of the year and whether the lease was one-way or round-trip. Annual contract rates were also negotiated with national shippers who did a large volume of business with TNG. As described above, rates were quite variable, both geographically and over time. As Karen Walsh noted:

This is a cut-throat, competitive business. There is an Excel yard less than a mile away from my branch. The guys in headquarters like to think that the TNG brand commands a premium, but if you ask me most customers think of us as TNG-Excel. It's all a blur in their minds. Price is really what drives them. Branch managers have to have the flexibility to respond to local conditions.

CEO, Bob Evans, offered his view on TNG's pricing decisions:

Our local markets are tough, Karen's absolutely right about that. We compete against large integrated providers like Excel, but also against local "Mom-and-Pops". Some customers care only about price. That's why we empower our branch managers to do what it takes to stay competitive locally.

But we have long-term contract accounts with national shippers as well. These large firms evaluate us on total cost. Given our large network and superior service, we often win their business, even though we are don't have the lowest rates. We have a national accounts group at headquarters that is responsible for negotiating these big national deals. This is a line of business the little guys can only dream about.

While pricing was something TNG had little control over, some branch managers would occasionally opt not to write certain leases. For example, during a peak season a branch might require a minimum of 30 days. As with pricing, decisions about minimum or maximum lease duration were made by local branch managers. Some used these types of restrictions more than others.

One-way leases were more difficult to manage, because they involved one branch losing a piece of equipment and another branch gaining it. Whether this net change was desirable or not depended on the local market conditions at each location. If the originating branch had a yard full of trailers and the receiving branch was sold out, the decision was easy. In other cases, branch managers negotiated with their regional manager for a credit or a replacement/relief of equipment as some future date. As COO Joe Reisman, noted, "Reallocation of equipment has always been a sore point among the regional managers. The way they handle it is really more of art than a science, but they seem to get the job done."

Data Collection

TNG maintained a variety of data at the branch, regional and company-wide level that were used for operational planning and financial control. Data on individual leases

were keyed into a computer system and stored for the current fiscal quarter. Every quarter, these lease data were used to produce summary managerial accounting measures for each branch. Lease data for closed leases (equipment that had been returned) were deleted from the system after six months.

The quarterly reports contained branch-level measures of the average lease rate, the average lease duration, average operating cost per lease and return on investment (ROI) measures (see below). Aggregate revenue and cost data were also compiled for use in standard financial accounting reports. Branch quarterly data was maintained for five years and all aggregate, company-wide accounting data was permanently archived.

ROI Measures

Among the most important measures that TNG managers monitored was return on investment (ROI). Individual leases were evaluated by comparing the stream of daily lease revenues to the capital cost of the equipment being leased in order to compute an ROI number. For example, a \$25 net revenue per day lease on a \$80,000 trailer yields an ROI of $(365 \text{ days/yr.}) \times (\$25/\text{day}) / \$80,000 = 11.4\%$. These ROI numbers were used on an operational level to evaluate individual lease rates, and as key indicator of overall branch performance. "If a branch manager has too many single-digit ROI leases during his quarterly review, his days at TNG are numbered," remarked Karen Walsh. She added, "At my branch, I try to maintain discipline; I rarely let a lease go out the door with an ROI of less than 10%."

Carl Betts described the culture and rationale behind TNG's intense focus on ROI:

What you have to understand is that TNG is a small division of a much larger financial services conglomerate. Our parent owns consumer credit card debt, real estate loans, commercial loans and other industrial equipment leasing operations. To them, we are just another asset category. If we don't get a competitive ROI on our equipment, then our parent will allocate their capital elsewhere. If we want to grow this business and secure an adequate share of the capital budget, we have to keep our ROI numbers up.

Tom Li

Tom finished his presentation and the follow-up discussion with the group was winding down. He had gone through his standard overview of how airlines implement yield management: the segmenting of leisure and business travelers, the advance purchase and Saturday-night stay restrictions, the multitude of fare classes offered for each flight, how airlines limit capacity for fare classes based on demand forecasts and optimization, overbooking, etc.. As he talked he noticed that Bob Evans looked intrigued at times. Others nodded approvingly at certain points as well and the follow-up discussion was lively.

At the same time, Tom had this nagging feeling that while the overall objective of yield management cut to the heart of TNG's business, the details of what he was describing about airlines were disturbingly different in important ways. At one point Joe Reisman remarked, "We don't have advance reservations in our business you know; our customers just phone up when they want equipment and expect us to deliver." Bob Evans expressed a similar doubt about any parallels to the leisure-business segments in airlines: "Our customers are more similar than airline passengers. They are all very price conscious." And the fact that lease rates were so homogeneous and competitive worried Tom. It didn't seem reasonable to suggest multiple rate classes for the same lease in TNG's type of environment. Or did it? And if differential rates weren't possible, did yield management make any sense for TNG at all?

Tom asked if he could see a sample of lease data from a representative branch. He wanted to get some idea of what a typical profile of leases looked like over a year. Carl Betts said that his group had done a recent demand study at the Yakima branch and that he could provide the necessary summary data to Tom. (See **Exhibit 5**)

Eric and Sandra looked pleased. "Based on what we've heard, I think we need move ahead and incorporate yield management into TNG's new operations design," Eric boomed confidently. "Right," added Sandra. "We're fleshing out TNG's end-point design here, and we need to make sure that the processes and rules are in place to make yield management an integral part of the design. Tom what's your groups availability going forward..."

Joe Reisman, who had been conspicuously quite during most of the discussion, interrupted:

Whoa ... hold on a minute! I've been sitting here politely for the last couple of hours, but I have to say my peace.

Bob, this stuff makes me nervous. Are our customers going to stand for us jacking up our rates just because we have them over a barrel? In fact, this whole damn redesign project makes me nervous! Why are we putting ourselves through this? I don't see Excel ripping out the guts of their business. Why should we? I mean, we have a 11 ROI business going here. Things are fine. I think we should just leave well enough alone.

The room was silent for a long time. Everyone's eyes were on Bob Evans. He took a deep breath and spoke. "Joe's got a point. Eric, Sandra, you've got to do some more thinking about this whole idea. We're talking about huge risks here for TNG with concepts nobody has tried in our business - not to mention your fees. We need a clearer idea of what this would entail, and we have to be able to justify the risks to our corporate parent and to ourselves."

Sandra slouched back in her seat, "Sure Bob. Of course." Eric nodded. There was another long pause. Eric broke the awkward silence. "I'll tell you what, Bob. We'll put together some kind of proposal on this and get it to you as soon as possible." He then turned to Tom. "Tom, why don't you meet me back at the hotel after dinner."

Exhibit 1 Semi-trailers



Exhibit 2 Why RENT from TNG? *(TNG Marketing Literature)*

Flexible programs -- rent trailers when and where you need them

Rent one day, one week, one month or longer. One-way -- arrange a pre-approved drop-off within TNG's 120 branch network

Largest, most varied trailer fleet available:

- vans
- double vans
- refrigerated vans
- flatbeds, lowbeds & extendibles
- space vans
- storage vans
- chassis

120 locations always nearby

Better conditioned equipment:

- Constantly adding new, state-of-the-art trailers
- Continual preventative maintenance
- 30-point pre-release inspection performed on every trailer before it leaves a TNG yard
- Quality-built equipment with various specifications to handle the toughest conditions

Value-added services

- Emergency breakdown service, TNG Line
- Mobile emergency service available
- Vehicle Protection Plan covers accidental damage, fire, or theft without the paperwork and inconvenience of traditional insurance programs
- Driver training program provides a series of educational materials for professional truck drivers on how to lead a healthier, more stress-free life-style on the road and off

Exhibit 3 Key Advantages of Trailer Leasing

- Cover seasonal or peak periods
- Improve operational and financial flexibility
- Re-align fleet imbalances
- Substitute your out-of-service equipment
- Avoid equipment obsolescence
- Experiment with equipment types and configurations
- Reduce overhead
- Protect yourself against market uncertainty
- Free up capital

Exhibit 4 Operating Data for a Typical Branch

Yakima Washington Branch - 1997

Operating Results
(\$1,000)

Lease Revenue	\$ 4,763	100.0%
Occupancy	\$ 150	3.1%
Salary Labor	\$ 165	3.5%
Hourly Labor	\$ 83	1.7%
Gross Profit	\$ 4,365	91.6%

Miscellaneous Data

Number of Trailers	470
Leases/Trailer/Yr.	6.63
Revenue/Trailer/Yr.	\$9,339

Transportation National Group

Exhibit 5 1997 lease data for Yakima branch

Fleet Size 470

Decisions made by TNG in 1997

Due to return based on decisions prior to week ending 1/5/97

Total Revenue \$4,763
(x\$1000)

Week End	#Inv.	1-WK			4-WK				8-WK				16-WK				
		\$/Day	Demd.	Accpt.	Ret.	\$/Day	Demd.	Accpt.	Ret.	\$/Day	Demd.	Accpt.	Ret.	\$/Day	Demd.	Accpt.	Ret.
1/5/97	119	CLOSED FOR HOLIDAY															
1/12/97	161	\$26.00	9	9	2	\$23.40	10	10	17	\$22.10	10	10	12	\$20.80	8	8	11
1/19/97	172	\$29.00	15	15	9	\$26.10	3	3	11	\$24.65	8	8	16	\$23.20	13	13	12
1/26/97	192	\$30.50	11	11	15	\$27.45	7	7	17	\$25.93	7	7	12	\$24.40	15	15	15
2/2/97	211	\$27.50	9	9	11	\$24.75	10	10	10	\$23.38	8	8	21	\$22.00	19	19	17
2/9/97	208	\$29.00	13	13	9	\$26.10	6	6	10	\$24.65	6	6	9	\$23.20	17	17	15
2/16/97	204	\$27.50	9	9	13	\$24.75	11	11	3	\$23.38	12	12	10	\$22.00	22	22	12
2/23/97	194	\$27.50	13	13	9	\$24.75	13	13	7	\$23.38	10	10	7	\$22.00	26	26	21
3/2/97	172	\$29.00	6	6	13	\$26.10	14	14	10	\$24.65	18	18	3	\$23.20	13	13	14
3/9/97	150	\$35.00	22	22	6	\$31.50	18	18	6	\$29.75	22	22	10	\$28.00	18	18	7
3/16/97	120	\$35.00	24	24	22	\$31.50	14	14	11	\$29.75	24	24	8	\$28.00	20	20	9
3/23/97	94	\$36.50	26	26	24	\$32.85	25	25	13	\$31.03	19	19	7	\$29.20	7	7	12
3/30/97	80	\$35.00	27	27	26	\$31.50	17	17	14	\$29.75	19	19	8	\$28.00	15	15	15
4/6/97	62	\$35.00	28	24	27	\$31.50	19	19	18	\$29.75	13	10	6	\$28.00	11	9	9
4/13/97	66	\$41.00	28	23	24	\$36.90	12	12	14	\$34.85	15	15	12	\$32.80	17	16	16
4/20/97	68	\$42.50	36	14	23	\$38.25	27	26	25	\$36.13	24	22	10	\$34.00	7	6	10
4/27/97	58	\$45.50	27	20	14	\$40.95	17	16	17	\$38.68	16	14	18	\$36.40	11	8	9
5/4/97	69	\$47.00	34	19	20	\$42.30	21	18	19	\$39.95	22	19	22	\$37.60	15	13	8
5/11/97	68	\$44.00	31	23	19	\$39.60	22	22	12	\$37.40	9	8	24	\$35.20	17	15	13
5/18/97	83	\$45.50	36	23	23	\$40.95	30	29	26	\$38.68	22	22	19	\$36.40	10	9	15
5/25/97	77	\$42.50	32	32	23	\$38.25	24	24	16	\$36.13	8	8	19	\$34.00	10	10	19
6/1/97	80	\$41.00	34	26	32	\$36.90	23	22	18	\$34.85	14	12	10	\$32.80	22	20	17
6/8/97	85	\$41.00	26	26	26	\$36.90	23	23	22	\$34.85	15	15	15	\$32.80	12	12	22
6/15/97	112	\$35.00	30	30	26	\$31.50	12	12	29	\$29.75	14	14	22	\$28.00	15	15	26
6/22/97	122	\$35.00	23	23	30	\$31.50	20	20	24	\$29.75	15	15	14	\$28.00	12	12	13
6/29/97	134	\$30.50	10	10	23	\$27.45	12	12	22	\$25.93	9	9	19	\$24.40	26	26	18
7/6/97	138	\$29.00	16	16	10	\$26.10	15	15	23	\$24.65	6	6	8	\$23.20	28	28	20
7/13/97	130	\$32.00	21	21	16	\$28.80	12	12	12	\$27.20	11	11	22	\$25.60	17	17	7
7/20/97	133	\$35.00	19	19	21	\$31.50	21	21	20	\$29.75	13	13	8	\$28.00	20	20	15
7/27/97	112	\$35.00	21	21	19	\$31.50	16	16	12	\$29.75	15	15	12	\$28.00	12	12	9
8/3/97	115	\$35.00	16	16	21	\$31.50	14	14	15	\$29.75	15	15	15	\$28.00	14	14	16
8/10/97	104	\$32.00	17	17	16	\$28.80	17	17	12	\$27.20	12	12	14	\$25.60	25	25	6
8/17/97	94	\$36.50	24	24	17	\$32.85	15	15	21	\$31.03	22	22	15	\$29.20	19	19	8
8/24/97	76	\$35.00	20	13	24	\$31.50	23	20	16	\$29.75	18	17	9	\$28.00	28	26	13
8/31/97	48	\$32.00	21	7	13	\$28.80	12	11	14	\$27.20	21	20	6	\$25.60	11	10	15
9/7/97	44	\$39.50	22	0	7	\$35.55	24	0	17	\$33.58	25	23	11	\$31.60	24	21	9
9/14/97	38	\$42.50	33	0	0	\$38.25	26	2	15	\$36.13	21	19	13	\$34.00	17	17	10
9/21/97	55	\$47.00	39	0	0	\$42.30	25	15	20	\$39.95	31	30	15	\$37.60	12	10	20
9/28/97	38	\$47.00	35	0	0	\$42.30	32	11	11	\$39.95	17	15	15	\$37.60	15	12	12
10/5/97	27	\$50.00	42	0	0	\$45.00	21	5	0	\$42.50	12	11	12	\$40.00	12	11	15
10/12/97	36	\$51.50	57	0	0	\$46.35	41	14	2	\$43.78	9	8	22	\$41.20	16	14	12
10/19/97	58	\$60.50	55	5	0	\$54.45	29	27	15	\$51.43	18	16	17	\$48.40	12	10	26
10/26/97	64	\$57.50	47	19	5	\$51.75	27	27	11	\$48.88	10	7	20	\$46.00	12	11	28
11/2/97	64	\$57.50	50	50	19	\$51.75	23	21	5	\$48.88	23	23	23	\$46.00	10	7	17
11/9/97	66	\$47.00	46	33	50	\$42.30	18	17	14	\$39.95	11	10	19	\$37.60	9	6	20
11/16/97	102	\$47.00	42	42	33	\$42.30	22	22	27	\$39.95	9	9	30	\$37.60	16	16	12
11/23/97	111	\$38.00	30	30	42	\$34.20	10	10	27	\$32.30	15	15	15	\$30.40	6	6	14
11/30/97	137	\$36.50	24	24	30	\$32.85	15	15	21	\$31.03	15	15	11	\$29.20	19	19	25
12/7/97	132	\$35.00	27	27	24	\$31.50	16	16	17	\$29.75	17	17	8	\$28.00	9	9	19
12/14/97	154	\$35.00	16	16	27	\$31.50	15	15	22	\$29.75	14	14	16	\$28.00	13	13	26
12/21/97	139	\$35.00	20	20	16	\$31.50	19	19	10	\$29.75	7	7	7	\$28.00	8	8	10
12/28/97	85	CLOSED FOR HOLIDAY															