THUNDERBIRD
SCHOOL OF GLOBAL MANAGEMENT

TB0055
Rev. 03/11

Brynja Thorbjornsdottir
Karen A. Brown

Frumherji Ltd., Reykjavik: The Vehicle Inspection and Emissions-Testing Process

In January 2008, Karl Sigurdsson, Senior Manager of Frumherji's Vehicle Department, was contemplating how Frumherji could grow its vehicle inspection and emissions-testing business. Frumherji held the largest market share in Iceland among companies sanctioned by the government to provide mandatory inspection and emission testing for private vehicles, but it needed to make some strategic and operational adjustments in order to maintain that lead and continue to grow profitably in the future. Sigurdsson knew the potential market was limited in Iceland, a small island nation with a population of just over 300,000. However, demographic changes presented some new opportunities. Iceland had experienced annual population gains of less than one percent between 2002 and 2004, but this had increased to nearly three percent between 2005 and 2007. Recent economic growth had attracted a new wave of immigrants, mostly from Eastern Europe. This pattern was expected to continue for at least the next decade. As a consequence of the in-migration, in the previous 10 years Iceland's foreign resident population had grown from two to six percent of the total population. The increase in population, in combination with economic growth and prosperity, had led to a 58 percent increase in the number of private vehicles in Iceland between 1996 and 2006—from 124,915 to 197,809.

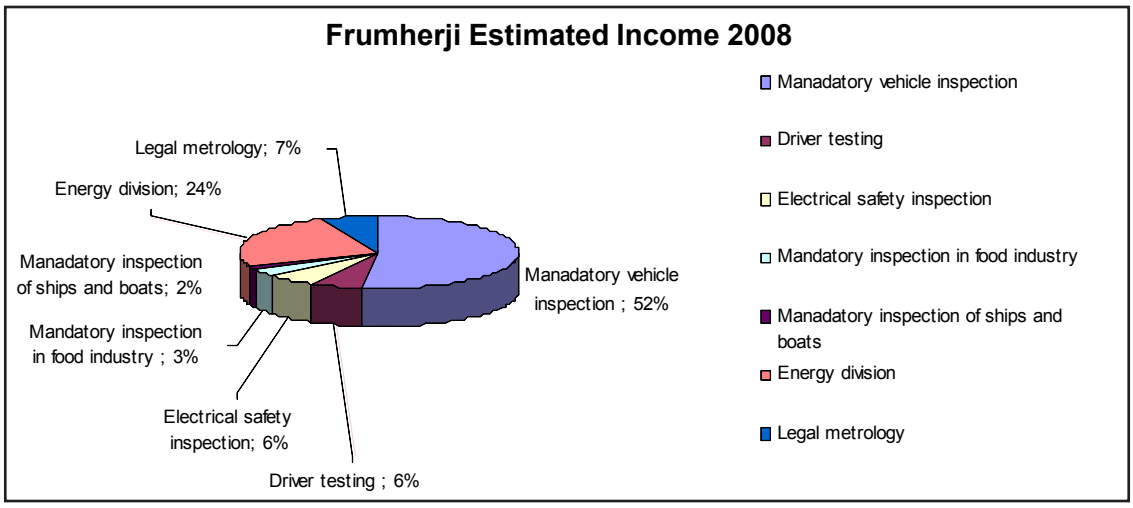
Sigurdsson knew that the quality of Frumherji's service was of central importance to continued growth in Iceland's small, close-knit population, where word-of-mouth advertising had great power. He discussed his thoughts with Anna Maria Thorvaldsdottir, Frumherji's Quality and HR Manager. They decided that analyzing the operations at one of the inspection stations would offer an opportunity to gain an understanding of the company's current processes and uncover ideas for improvement that could be adopted company-wide. They chose the Hestháls station in Reykjavik as a pilot site because it did a large volume of business and the manager there was especially open to the idea of experimenting with new service and process innovations. Sigurdsson and Thorvaldsdottir decided to focus the pilot project on the inspection and emission-testing process for private vehicles. To gain an outside perspective on the operation, they sought the assistance of a local consultant, Brynja Thorbjornsdottir. She had gathered process data and made observations about customer service, and they were now considering how to use the information to identify problems and introduce solutions.

Frumherji Ltd. Background Information

Frumherji Ltd. was the leading inspection, testing, and legal metrology[1] company in Iceland. Its services varied from mandatory vehicle inspections and emissions tests, driver testing, and carwash, to mandatory inspections of ships, boats, and fish processing plants. Vehicle inspections represented approximately 52 percent of the company's business, and private vehicle inspections represented seven percent.

In 1997, the Icelandic government decided to outsource inspection functions to the private sector. Following this decision, former employees of the state inspection enterprise joined together to form Frumherji, Ltd.

[1] Legal metrology is verification of all gauges used in business, e.g., scales, gas, electricity, and water meters.



Although private firms now operated these businesses, they were subject to strict regulations and monitoring from the Icelandic government's regulating agency, Umferðarstofa. For example, procedures were standardized, and all testing and inspection divisions were required to be accredited according to International Standards in the ISO/IEC 17000 series. Moreover, government regulations mandated that the technical manager be a certified engineer and that each inspector attend an extensive, one-month training program and pass an examination. All contracting inspection companies were expected to meet the highest standards of competence, independence, impartiality, and integrity.

As shown in Figure 1, Frumherji operated inspection stations in 24 locations around Iceland. The Hesthás Station was one of six stations in the Reykjavik area, labeled as Höfuðborgarsvæðið (which means capital city in Icelandic) on the map in Figure 1. Its primary competitor in the inspection market, Aðalskoðun, Ltd., had seven stations. Frumherji held 75 percent of the vehicle inspection market share in rural areas and 60 percent in the Reykjavik area. Qualified auto workshops were considered minor competitors because they could only conduct official inspections of vehicles that had been repaired ***after*** failing an initial inspection at a Frumherji or Aðalskoðun location. Figure 2 shows a breakdown of business volume and inspection results from 2007 for both Frumherji and its competitor, Aðalskoðun.

Figure 1. Locations of Frumherji Inspection Stations in Iceland

Figure 2. Market Share Breakdown and Inspection Results: Frumherji and Aðalskoðun, 2007

	Frumherji		Aðalskoðun	
Post-Inspection Status	**Number**	**Percent**	**Number**	**Percent**
Total Personal Vehicles Inspected	93,161	73.09	34,302	26.91
Vehicles Passing First Inspection	70,057	75.20	26,486	77.21
Vehicles Failing First Inspection: Need Repair	22,940	24.62	7,789	22.71
Vehicles Failing First Inspection: Driving Ban	164	0.18	27	0.08

In 2008, Frumherji had 101 employees, 57 of whom worked for the vehicle inspection division (42 inspectors, plus 15 clerical personnel who worked in the reception areas and offices.) Of the 42 inspectors employed company-wide, two to six typically serviced personal vehicles at the Hesthás station. Employees rotated among Frumherji locations, depending on demand fluctuations, number of days per month each facility was open, employee turnover, vacations, training needs, and other factors. During the time Thorbjornsdottir observed service processes at Hesthás, there were three inspectors servicing standard-sized personal vehicles, and one inspector was handling oversized vehicles.

Frumherji placed a strong emphasis on service quality, and communicated its quality strategy and measurable goals to employees through a company intranet site, signs posted at inspection stations, training, and staff meetings. (See Exhibits 1 and 2.) All processes were designed to deliver quality service to customers at competitive prices, and with minimal inconvenience. The company had recently managed to reduce its error rate in the inspection recording process from five percent to about 0.8 percent, and its managers were committed to lowering it further.

Government Inspection Requirements

The Icelandic government required new vehicles to be inspected for emissions at the dealership before they were sold, and again when they were three years old. The next mandatory inspection occurred at five years, with required annual checks after that. The last digit on the license plate indicated the month a vehicle should be inspected. For example, if the last digit was nine, the owner was required to obtain an inspection sometime between the first of September and the end of October. This system was designed to ensure even demand throughout the year.

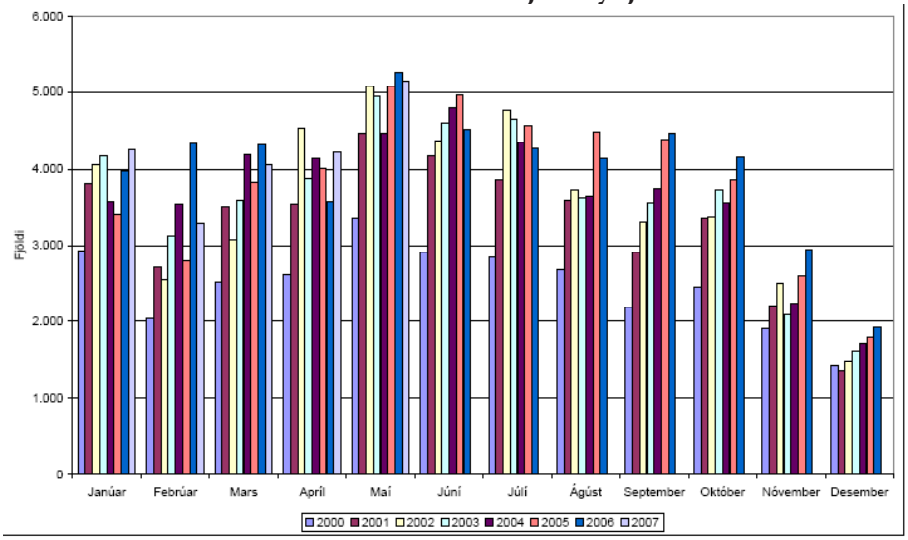
Vehicle Inspection and Emissions-Testing Operations at the Hesthás Station in Reykjavik

Operating hours at Hesthás were from 8:00 to 17:00 Monday through Friday, with the exception of holidays. There was no advance booking system at Hesthás for mandatory vehicle inspection in 2008. It had abandoned advance booking in 2002 because a high percentage of customers with reservations had not kept their appointments.

On average, the Hesthás station inspected 75 personal vehicles per day. However, there was a high degree of variation in demand by month, by day of the week, and by time of day. Monthly demand patterns for Frumherji's Reykjavik stations are displayed graphically in Figure 3. Demand was lowest in November and December. Not only were these the coldest months (the average temperature in Reykjavik was around 0°C) when people tended to "hibernate," but the license plate numbering system did not include any mandatory inspections during this period. May was the busiest month, with nearly three times the December volume. (During the summer, when demand was highest, Frumherji hired a high school student to assist in the Hesthás inspection hall.) Thursday and Friday were the busiest days of the week, and within any given day, demand was highest in the afternoon, especially near closing time. Customers who arrived before 16:30 usually received service that day, but some had to be turned away.

Frumherji had coped with demand variations and uncertainties with excess capacity in staffing and physical space, and also by accepting the potential loss of customers who found the waiting lines too long and departed to try another Frumherji location or "defect" to the competition. Four challenges made it difficult to maintain sufficient staffing levels.

Figure 3. Monthly Aggregate Demand Patterns for Vehicle Inspections and Emissions Tests at Frumherji's Reykjavik Stations



Source: Jon Hjalti Asmundsson, Technical Manager, Frumherji, Ltd.

- First, there was a shortage of qualified mechanics who had completed the government-mandated training program and passed the certification exam.
- The second staffing challenge was that most employees took their vacations during summer months when demand for inspections was highest.
- The third challenge was the high employee turnover rate of 22 to 23 percent per year, and the prospect of an even higher percentage as members of Hesthal's aging workforce retired. Aðalskoðun, Frumherji's primary competitor, was experiencing similar turnover rates, so the problem was not unique to Frumherji.
- The fourth challenge had to do with the compensation limitations the Icelandic government imposed on inspection companies such as Frumherji and Aðalskoðun; they were prohibited from offering the kinds of productivity incentives mechanics could receive from other automotive-related businesses. Once mechanics gained experience at Frumherji, they could easily move to other employers.

The Hesthåls Station Facility

The Hesthåls station was built in1989 as a government-owned inspection station, in accordance with Swedish standards. Since then, Frumherji, which owned the building, had remodeled and adapted it to changing situations. One recent problem stemmed from the increasing numbers of large vehicles imported to Iceland. Inspection station doorways and lanes were too narrow and the elevators (hoists) too small to accommodate some of these larger vehicles easily.[2]

The inspection hall had three lanes for standardized-sized vehicles, as shown in Figures 4 and 5. Two were designated for personal vehicle inspection and the third for inspections for insurance companies and other high-volume customers with special requirements. When available, the special lane also was used for inspection of personal vehicles. A fourth lane, separated from the other three by a wall, was available to accommodate larger vehicles, as shown in Figure 4.

In accordance with Frumherji's goals, the employees had been involved in a campaign to keep work areas well organized, applying the 5S principles that originated in Japan.[3] Figure 6 shows one of the tool boards in the inspection hall.

[2] For insight about the large vehicles popular in Iceland, see Walker, M., "Icelanders' Love of Crazy Trucks Hits Deep Freeze," *The Wall Street Journal,* Friday, May 2, 2008, A-1.

[3] 5S is a concept that involves bringing order and discipline to the workplace. The term originally came from five Japanese words beginning with the "S" sound, but English translations vary among organizations and have included Sort, Sweep, Standardize, Shine, Simplify, Straighten, Separate, Scrub, Systematize, Sustain, Store, and other such words.

Figure 4. Architectural Drawings and Facility Layout of the Hestháls Station

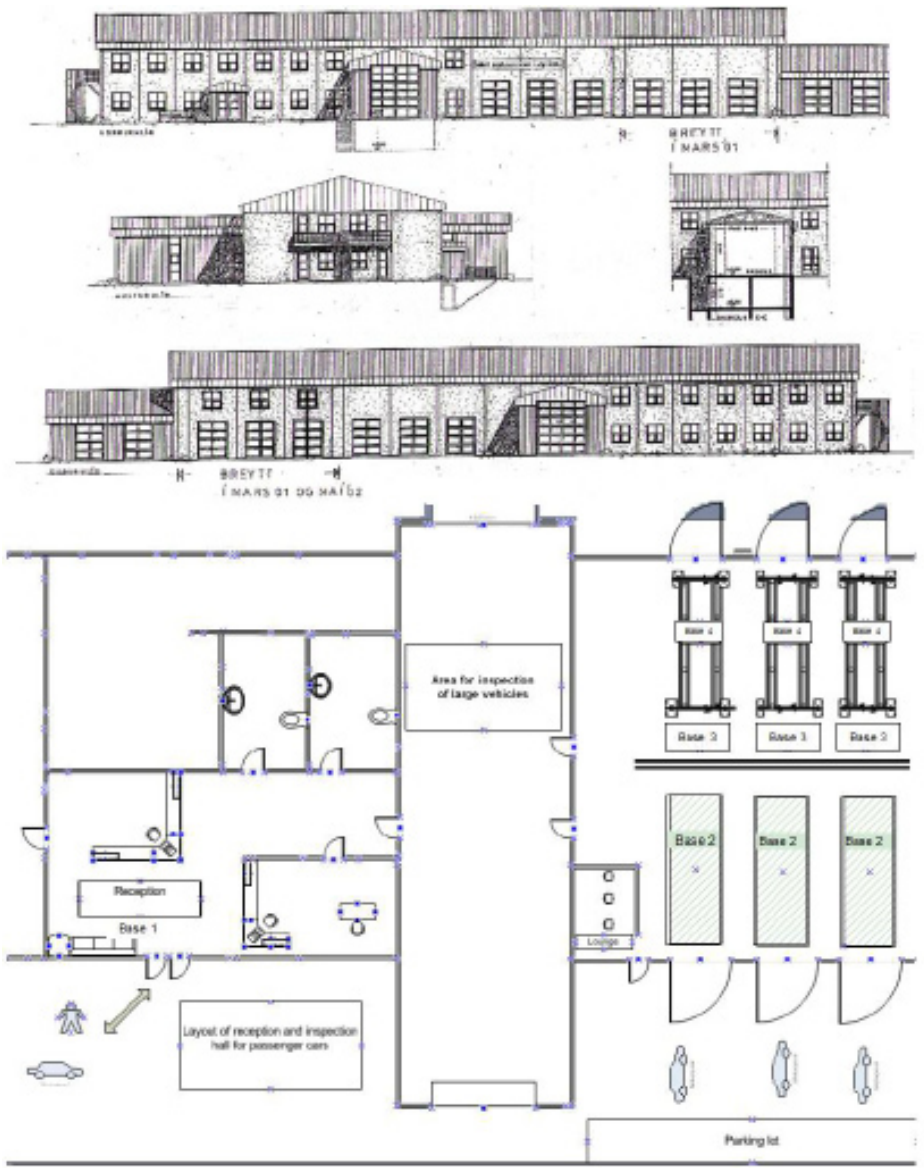


Figure 5. The Vehicle Inspection Hall

Figure 6. Tool Board

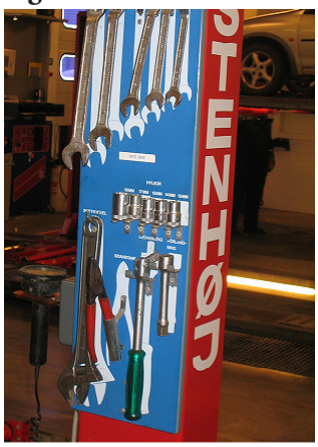


Figure 7 shows the only sign in the inspection hall. It guided customers to the exit, in Icelandic, the only language used in signs at the Hesthál station.

Figure 7. "Out" Sign

There was a desk at either end of the inspection hall. The desk at the entry end of the inspection hall held numbered clipboards, generally in FIFO sequence, with inspection cards for vehicles awaiting inspection. The numbers indicated to employees which vehicle was next in line for service. Inspectors used the desk at the exit end when they signed inspection documents. (See Exhibit 3.) An office clerk retrieved signed documents from that desk whenever she[4] had free time from other responsibilities. Information sheets given to owners whose vehicles had not passed inspection were kept there, as well.

Base 1, the reception area (see Figure 8), offered refreshments, comfortable seating, and reading material for customers. The receptionists could follow the process in the adjoining inspection hall on a video monitor.

Figure 8. Base 1—The Reception at Hesthals Station

The Vehicle Inspection and Emissions-Testing Process at Hesthál

Brynja Thorbjornsdottir, the consultant who had been enlisted to assess the inspection process and related customer service issues, was aware that the first step in her analysis would be to fully document the process. She gathered data through observation during on-site walkthroughs, interviews with employees and customers, timing of process steps, and the use of company data. The results of her analysis are summarized below.

Step 1: Customer Arrival and Check-in

Upon arrival at the Hesthál station, the owner parked his or her vehicle in front of either the reception office or the inspection hall, and walked into the reception office (Base 1 in the layout shown in Figure 4). Thorbjornsdottir noted that some people parked in front of the reception area to process their initial paperwork, and later moved their vehicles to the parking lot designated for those awaiting inspection. This was more common in the colder months than in the warmer months.

Once inside the reception area, each customer took a number and waited for service. The average waiting time varied from none, when there was low demand, to 16 minutes during the busiest times. There could be delays in the reception area, even when there were no cars in the inspection hall, because the receptionists also had to serve customers who were there for other services such as driver testing, picking up their license plates, and buying drinks and sweets.

When his or her number was called, the vehicle owner met with a receptionist and showed the required documentation. The clerk used a government database to determine if the customer had paid the insurance fee and vehicle tax. If not, the vehicle owner was turned away (about 1.7 percent). The owner then had the option of calling the insurance company to arrange for payment and waiting while the company changed the status of the vehicle in the system. When the queue was long, receptionists warned customers to prepare for a long wait. Once all of the paperwork was approved, the customer paid for the inspection and received an inspection form (see Exhibit 3) to give to the inspector, along with a number indicating his or her position in line. The fee customers paid for a first inspection was, in Icelandic króna (ISK), equivalent to US$65-125, and US$12.50-25 for a second inspection, depending on vehicle size.[5] Processing time at the reception desk ranged from a few seconds

leva tempo, é uma atividade?

[4] All office clerks were women.

[5] The exchange rate in 2008 was 112 króna (ISK) per U.S. dollar.

to two minutes. After completing check-in requirements, the customer returned to the vehicle and moved it to the lot adjacent to the inspection hall if it was not already parked there. He or she waited in the lot until a monitor on the outside of the building showed the assigned queue number and indicated the door to enter. Some vehicle owners opted to stay indoors until their queue numbers appeared on the screen in the reception area.

Step 2: Inspection Lane Entry, Inspection, and Emissions Test at Base 2

When the monitor indicated it was time to enter the inspection hall, the customer drove into the designated lane at Base 2. Service was generally on a first-come/first-served basis, but sometimes inspectors served customers needing a second inspection ahead of first-time customers. In some cases, people fell asleep in their cars and were not ready to drive into the inspection hall when their turn came. Customers who had to move their vehicles from the reception lot to the inspection lot created delays if the queue was short. And, those who waited indoors also created lags when they walked to the vehicle queue after their numbers appeared on the monitor. During Thorbjornsdottir's observations, the wait for service, once the paperwork was complete, was from five to 78 minutes, but she learned from personnel at Frumherji that it could be as long as 90 minutes.

When the vehicle arrived at Base 2 (see facility layout in Figure 4), the customer was instructed to exit the vehicle, leave the keys in the ignition switch, and wait in the lounge. Sometimes drivers mistakenly took their car keys with them to the lounge and the inspector had to retrieve them. On some occasions, vehicle owners proceeded past Base 2 and directly to Base 3 because there was no sign indicating where to stop.

During the time period Thorbjornsdottir observed operations, the three inspectors dedicated to standard-sized vehicles generally worked as a team in a single lane, in assembly-line fashion, with one inspector manning each base sequentially. The arrangement was somewhat fluid, and inspectors sometimes rotated over to one of the other lanes to perform second inspections and other functions.

At Base 2, the inspector inserted a sensor into the exhaust pipe to measure the vehicle's emissions. He[6] examined the registration papers, then sat in the driver's seat to check the odometer, the gearing, and the seatbelts. The inspector then got out of the car to check the headlights, windshield, rear lights, license plate lights, tires, and the function of the doors and trunk. He also opened the hood to inspect the engine components and compared the vehicle identification number with the one on the paperwork. If the vehicle had a towing device, the inspector checked to see if it met safety standards and queried a database to be sure it was registered with the vehicle. All equipment needed for the inspection at this base was located on a movable trolley.

The time spent at Base 2 was typically between four and 10 minutes. On average, 15.23 percent of vehicles failed the inspection at Base 2. Those failing at this station still moved forward to Base 3 for further inspection.

Step 3: Inspection at Base 3

After inspection at Base 2, the inspector drove the vehicle to Base 3, where the next inspector checked the front and rear brakes. About 1.75 percent of vehicles failed this portion of the inspection. While observing the process, Thorbjornsdottir noted that a few vehicles were delayed at Base 3 because the vehicle at Base 4 was not finished. In those instances, the Base 3 inspector assisted the Base 4 inspector in completing necessary inspection tasks. Documented standards and work procedure rules, on which all employees were cross-trained, usually made it easy for inspectors to assist one another. The process at Base 3 normally involved one to two minutes of work.

Step 4: Inspection at Base 4

At Base 4, shown in Figure 9, the inspector drove the vehicle to the hoist, where the next inspector raised it to a height that allowed him to inspect the undercarriage; the tie rod ends, steering components and suspension, and frame components. Inspectors looked for fluid leaks, worn components, and other abnormalities that might render a vehicle unsafe. Inspection time at Base 4 varied between four and 12 minutes. The first-time pass rate at Base 4 was 92.37 percent.

[6] All inspectors were men.

Figure 9. Base 4—Car Elevator

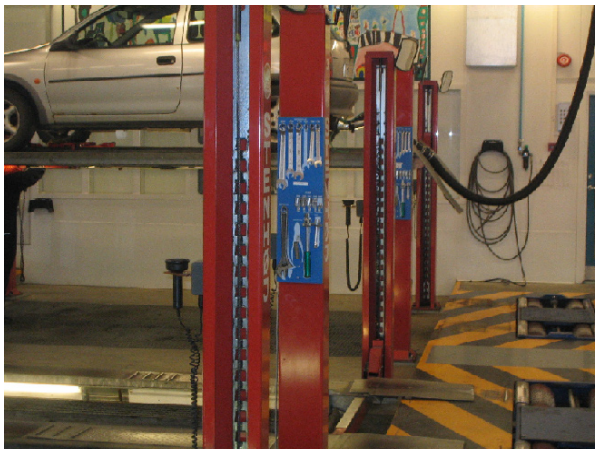


Figure 10. Base 4—Screens Which Show the Outcome of Tests

A video monitor at Base 4 allowed inspectors to read test outcomes (see Figure 10). A similar video monitor in the reception area notified customers when their inspections were complete, and they walked to the inspection hall to pick up their vehicles and paper copies of competed inspection documents.

Summary: Bases 2 to 4

The standard throughput or flow time for personal vehicle inspection (Bases 2-4) ranged between 15 and 25 minutes for smaller vehicles (which represented the majority of vehicles inspected), and between 20 and 45 minutes for larger vehicles. This included waiting time associated with delays and line imbalances. Thorbjornsdottir observed that all inspectors seemed to know what they were doing, but some appeared to work more quickly than others. A few of these differences might have been attributable to the sizes of the vehicles they were inspecting, but experience levels also may have played a part.

About 24.8 percent of the vehicles did not pass inspection the first time through the process. As one of the inspectors observed, in many cases the owners could have fixed minor problems easily before bringing their vehicles in for inspection, thereby saving themselves the time and cost associated with a second inspection. Examples of minor problems included cracks in the windshield, excessive engine noise, or worn tires. Owners whose vehicles did not pass inspection could return to any station of their choice, including those owned by Frumherji, Aðalskoðun, or a qualified workshop, for a second inspection.

Step 5: Recording Results into the Database

The fifth step in the process was the recording of inspection results. A clerk in the reception area collected the completed documents from the inspection hall two to four times each day and recorded them between other assignments. The actual recording of a single report required about one minute of a clerk's time. The clerks had to finish this work each day because the information had to be logged into the government database early the next morning. When inspectors worked overtime, the clerks had to work additional overtime to finish data entry after the inspectors left the worksite. The next morning, the manager of the vehicle department reviewed these records and transmitted them to Umferðarstofa, the regulating agency. Later that day, Umferðarstofa would return a document identifying the errors in the reports (about 0.8 percent of reports had errors). The supervisor of the reception area would oversee the process of correcting the errors. The previous day's corrected records were then transmitted to Umferðarstofa with the current day's records.

General Process Observations

Thorbjornsdottir spent several hours in the waiting lounge observing the process through a window. This gave her the opportunity to understand the process from the customers' point of view. Those she interviewed said the

most stringent inspection in town was at the Hestháls station. If your car was in poor condition and you wanted to be let off easily, you would not go there. But, if you wanted a good inspection to ensure everything was all right, Hestháls station was the place to go.

It was her impression that people were generally dissatisfied with the long waiting times. For example, a young woman and her husband had waited 90 minutes and, in her words, "used both of our lunch hours and coffee breaks that day." Her car had not passed the inspection the day before and she was unhappy to have to wait so long to have a five-minute check to verify that the necessary repairs had been completed.

Next Steps

Karl Sigurdsson and Anna Maria Thorvaldsdottir were pleased with the process documentation and observations Brynja Thorbjornsdottir had provided. They now needed to make the best use of this information to assess process strengths and weaknesses before moving forward with service delivery experiments and changes. One of their preliminary ideas was to create separate lanes for first and second inspections, but they were cautious about jumping to any conclusions. They wanted to consider the risks that might be associated with potential changes and what the best outcome measures should be. Sigurdsson and Thorvaldsdottir knew this would require a lot of work, but they were optimistic about achieving market-share goals while maintaining profitability and quality standards.

Exhibit 1. Quality Strategy of Frumherji Ltd.*

- Be the leading Icelandic company in inspection, testing, and legal metrology.
- Meet the quality expectations of all relevant stakeholders.
- Attract and hire the most qualified employees.
- Acquire and use supplies that meet expectations of the government and customers.
- Emphasize employee education and training to maintain quality performance and quality vision.
- Ensure that all employees show respect to customers and provide excellent service, where quality is judged by short waiting times and positive ratings in customer surveys.
- Offer fair and competitive pricing.
- Give all employees access to the company's financial performance information.
- Provide impartial and professional service where the goals are accuracy and consistency.
- Operate all areas of the business in accordance with quality goals.

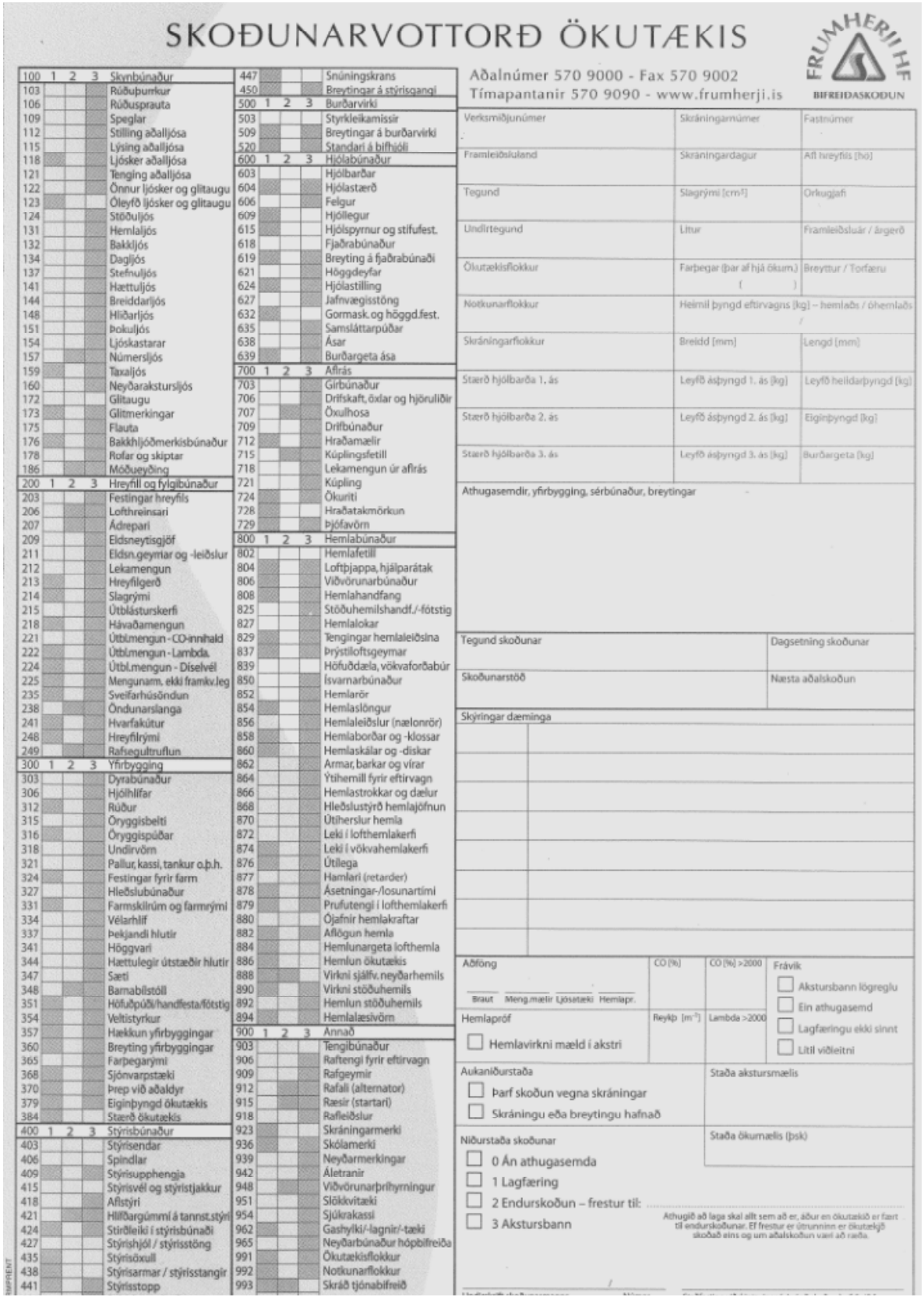
The CEO of the company is responsible for ensuring that the quality strategy is imparted to all employees, and visibly embedded in daily operations

* Translated from Icelandic.

Exhibit 2. Goals and Key Performance Indicators for the Vehicle Inspection Department at Frumherji, Ltd.

- Success in the Market
  - KPI: Market Share
  - Goal: More than 55 percent
- Service Excellence
  - KPIs: Waiting time, distribution of service stations, and customer satisfaction as measured by surveys
  - Goals for Waiting Time
    - For mandatory vehicle inspection, waiting time for service should be no more than 90 minutes in stations where appointments are not required
    - For stations operating five days per week, and where appointments are available, waiting time for an appointment should be no more than five business days
    - For stations open fewer than five days per week, the waiting time for an appointment should be no more than 14 business days
    - For stations open on a limited monthly schedule, the waiting period for appointments should be no more than one month
    - Stations with irregular hours must always make appointments available
    - These rules do not apply during holidays, when employees are on sick leave, or when other extenuating circumstances exist
  - Goals for Distribution of Service Stations
    - Maximum 20 km travel distance to a station for Icelandic residents in towns with more than 5,000 inhabitants
    - Maximum 150 km travel distance to a station for Icelandic residents in more remote locations
  - Goals for Customer Satisfaction
    - Minimum 80 percent of customers rate Frumherji's service positively in annual surveys
- Pricing
  - KPIs: Comparison to competitors' prices, consistency across Frumherji locations
  - Goals for Pricing: Same prices at all Frumherji stations and within five percent range of the average price of competiors
- Quality
  - KPIs: Error rates, distribution of errors across locations and employees, homogeneity of service, comparison with government standards
  - Goals
    - Error rates below three percent in all inspection systems
    - Fewer than five percent of employees should have error rates outside three standard deviations from the mean
    - Error rates should be within 10 percent of government specifications
    - Error rates should be equivalent to or lower than those of competitors
- Employee Qualifications
  - KPIs: Education, experience, training, results from qualification testing
  - Goals: All employees possess the required education, training, and experience; employees achieve at least a 70 percent score on qualification tests

Exhibit 3. Inspection Form



SKOÐUNARVOTTORÐ ÖKUTÆKIS

FRUMHERJI HF
BIFREIÐASKOÐUN

Aðalnúmer 570 9000 - Fax 570 9002
Tímapantanir 570 9090 - www.frumherji.is

100	1	2	3	Skynbúnaður
103				Rúðuþurrkur
106				Rúðusprauta
109				Speglar
112				Stilling aðalljósa
115				Lýsing aðalljósa
118				Ljósker aðalljósa
121				Tenging aðalljósa
122				Önnur ljósker og glitaugu
123				Öleyfð ljósker og glitaugu
124				Stöðuljós
131				Hemlaljós
132				Bakkljós
134				Dagljós
137				Stefnuljós
141				Hættuljós
144				Breiddarljós
148				Hliðarljós
151				Þokuljós
154				Ljóskastarar
157				Númersljós
159				Táxaljós
160				Neyðarakstursljós
172				Glitaugu
173				Glitmerkingar
175				Flauta
176				Bakkhljóðmerkisbúnaður
178				Rofar og skiptar
186				Móðueyðing
200	1	2	3	Hreyfill og fylgibúnaður
203				Festingar hreyfils
206				Lofthreinsari
207				Áfrepari
209				Eldsneytisgjöf
211				Eldsn.geymar og -leiðslur
212				Lekamengun
213				Hreyfilgerð
214				Slagrými
215				Útblásturskerfi
218				Hávaðamengun
221				Útbl.mengun - CO-innihald
222				Útbl.mengun - Lambda
224				Útbl.mengun - Díselvél
225				Mengunarm. ekki framkv.leg
235				Sveifarhúsöndun
238				Öndunarslanga
241				Hvarfakútur
248				Hreyfilrými
249				Rafsegultruflun
300	1	2	3	Yfirbygging
303				Dyrabúnaður
306				Hjólhlífar
312				Rúður
315				Öryggisbelti
316				Öryggispúðar
318				Undirvörn
321				Pallur, kassi, tankur o.þ.h.
324				Festingar fyrir farm
327				Hleðslubúnaður
331				Farmskilrúm og farmrými
334				Vélarhlíf
337				Þekjandi hlutir
341				Höggvari
344				Hættulegir útstæðir hlutir
347				Sæti
348				Barnabílstóll
351				Höfuðpúði/handfesta/fótstig
354				Veltistyrkur
357				Hækkun yfirbyggingar
360				Breyting yfirbyggingar
365				Farþegarými
368				Sjónvarpstæki
370				Þrep við aðaldyr
379				Eiginþyngd ökutækis
384				Stærð ökutækis
400	1	2	3	Stýrisbúnaður
403				Stýrisendar
406				Spindlar
409				Stýrisupphengja
415				Stýrisvél og stýristjakkur
418				Aflstýri
421				Hlífðargúmmí á tannst.stýri
424				Stýrileiki í stýrisbúnaði
427				Stýrishjól / stýrisstöng
435				Stýrisöxull
438				Stýrisarmar / stýrisstangir
441				Stýrisstopp
447				Snúningskrans
450				Breytingar á stýrisgangi
500	1	2	3	Burðarvirki
503				Styrkleikamissir
509				Breytingar á burðarvirki
520				Standari á bifhjóli
600	1	2	3	Hjólabúnaður
603				Hjólbarðar
604				Hjólastærð
606				Felgur
609				Hjóllegur
615				Hjólspyrnur og stífufest.
618				Fjaðrabúnaður
619				Breyting á fjaðrabúnaði
621				Höggdeyfar
624				Hjólastilling
627				Jafnvægisstöng
632				Gormask. og höggd.fest.
635				Samsláttarpúðar
638				Ásar
639				Burðargeta ása
700	1	2	3	Aflrás
703				Gírbúnaður
706				Driflskaft, öxlar og hjöruliðir
707				Öxulhosa
709				Drifbúnaður
712				Hraðamælir
715				Kúplingsfetill
718				Lokamengun úr aflrás
721				Kúpling
724				Ökuriti
728				Hraðatakmörkun
729				Þjófavörn
800	1	2	3	Hemlabúnaður
802				Hemlafetill
804				Loftþjappa, hjálparátak
806				Viðvörunarbúnaður
808				Hemlahandfang
825				Stöðuhemilshandf./-fótstig
827				Hemlalokar
829				Tengingar hemlaleiðslna
837				Þrýstiloftsgeymar
839				Höfuðdæla, vökvaforðabúr
850				Ísvarnarbúnaður
852				Hemlarör
854				Hemlaslöngur
856				Hemlaleiðslur (nælonrör)
858				Hemlaborðar og -klossar
860				Hemlaskálar og -diskar
862				Armar, barkar og vírar
864				Ýtihemill fyrir eftirvagn
866				Hemlastrokkar og dælur
868				Hleðslustýrð hemlajöfnun
870				Útiherslur hemla
872				Leki í lofthemlakerfi
874				Leki í vökvahemlakerfi
876				Útilega
877				Hamlari (retarder)
878				Ásetningar-/losunartími
879				Prufutengi í lofthemlakerfi
880				Ójafnir hemlakraftar
882				Aflögun hemla
884				Hemlunargeta lofthemla
886				Hemlun ökutækis
888				Virkni sjálfv. neyðarhemils
890				Virkni stöðuhemils
892				Hemlun stöðuhemils
894				Hemlalæsivörn
900	1	2	3	Annað
903				Tengibúnaður
906				Raftengi fyrir eftirvagn
909				Rafgeymir
912				Rafali (alternator)
915				Ræsir (startari)
918				Rafleiðslur
923				Skráningarmerki
936				Skólamerki
939				Neyðarmerkingar
942				Áletranir
948				Viðvörunarþríhyrningur
951				Slökkvitæki
954				Sjúkrakassi
962				Gashylki/-lagnir/-tæki
965				Neyðarbúnaður hópbifreiða
991				Ökutækisflokkur
992				Notkunarflokkur
993				Skráð tjónabifreið

Verksmiðjunúmer	Skráningarnúmer	Fastnúmer
Framleiðsluland	Skráningardagur	Afl hreyfils [hö]
Tegund	Slagrými [cm³]	Orkugjafi
Undirtegund	Litur	Framleiðsluár / árgerð
Ökutækisflokkur	Farþegar (þar af hjá ökum.) ( )	Breyttur / Torfæru
Notkunarflokkur	Heimil þyngd eftirvagns [kg] – hemlaða / óhemlaða /	
Skráningarflokkur	Breidd [mm]	Lengd [mm]
Stærð hjólbarða 1. ás	Leyfð ásþyngd 1. ás [kg]	Leyfð heildarþyngd [kg]
Stærð hjólbarða 2. ás	Leyfð ásþyngd 2. ás [kg]	Eiginþyngd [kg]
Stærð hjólbarða 3. ás	Leyfð ásþyngd 3. ás [kg]	Burðargeta [kg]

Athugasemdir, yfirbygging, sérbúnaður, breytingar

Tegund skoðunar	Dagsetning skoðunar
Skoðunarstöð	Næsta aðalskoðun

Skýringar dæminga

Aðfönga	CO [%]	CO [%] >2000	Frávik
Braut Meng.mælir Ljósatæki Hemlaþr.			☐ Akstursbann lögreglu ☐ Ein athugasemd ☐ Lagfæringu ekki sinnt ☐ Lítil viðleitni
Hemlapróf	Reykþ [m⁻¹]	Lambda >2000	
☐ Hemlavirkni mæld í akstri			

Aukaniðurstaða
☐ Þarf skoðun vegna skráningar
☐ Skráningu eða breytingu hafnað

Staða akstursmælis

Niðurstaða skoðunar
☐ 0 Án athugasemda
☐ 1 Lagfæring
☐ 2 Endurskoðun – frestur til: .....
☐ 3 Akstursbann

Staða ökumælis (þsk)

Athugið að laga skal allt sem að er, aður en ökutækið er fært til endurskoðunar. Ef frestur er útrunninn er ökutækið skoðað eins og um aðalskoðun væri að ræða.

/