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9B19B001

Health Services Software

Kurt Schobel wrote this case solely to provide material for class discussion. The author does not intend to illustrate either effective or ineffective handling of a managerial situation. The author may have disguised certain names and other identifying information to protect confidentiality.

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Health Services Software (HSS) was a small software development company in Ontario, Canada, founded in 2012. Five years later, the company was at a crossroads. The competitive landscape had changed since HSS was founded, and the chief executive officer (CEO), Fred Stevens, was considering whether to change the company’s pricing model for its software licences. However, before he could consider his pricing options, he needed to better understand the underlying costs of the three types of service provided by HSS.

With the licences approaching their expiry date, Stevens hired a consultant to develop a model that would allow HSS to cost all three of its services. The consultant set out to do the costing and provide some pricing options.

**COMPANY BACKGROUND**

HSS developed specialized software for use in health care facilities. It was one of only a few companies developing software of this type and, as a result, the company’s revenue growth had been exponential. This rapid growth coupled with a government mandate for key performance indicators that were provided by the software put HSS in an ideal position to dominate the marketplace. Thus, whatever price HSS set would become the industry standard for some time.

HSS was created by a group of health care professionals who recognized a need for specialized software for hospital administration. The founders’ knowledge along with their connections at hospitals enabled the company to address specific concerns and develop innovative ways of addressing some of the challenges in health care. At the beginning, the company sold its software to individual hospitals, but as the company grew and demand for its software increased, HSS initiated discussions with the health authorities responsible for regional public health administration (known as Local Health Integration Networks or LHINs) to broaden the company’s client base.

Hospitals varied in size and scope, but all struggled with scarce operating budgets. When HSS was first established, it offered its software to clients as a capital purchase. The client paid a large, up front bill for access to the software. The typical arrangement was for a five-year licence. At the time, clients preferred this pricing model because it was a one-time cost, and many clients had capital funding from the province of Ontario that could be used for purchases of this sort. By using the five-year licence, clients were able to avoid annual recurring costs for software that would tie up already stressed operating budgets. Now, five years later, these same clients did not have additional capital to pay for a further five years of software access, so they were looking for a subscription-based service.

**OPERATIons**

**Budget**

The HSS budget consisted primarily of salaries and standard operating expenses for a small software company. The total operating budget was CA$1.05 million[[1]](#footnote-1) annually (see Exhibit 1).

**Lines of Service**

From the client’s perspective, HSS provided three distinct services:

*Software development* was the backbone of HSS, and the capacity within software development drove all other costs. Activities included software development, the provision of help desk services, and, occasionally, sales to existing clients looking for new features. There were four software developers in this area. The total office space for the software development team was 250 square metres.

*Professional services* consisted of two client service representatives who worked with new sites and travelled to sites to install the software and provide technical support during the installation process. Professional services occupied 40 square metres of office space.

*Special projects* was important because, since its inception, HSS would in any given year receive requests for special or unique features within the software. Special projects would be developed for one client and then, when appropriate, bundled with future versions of the software. Special projects were difficult to forecast but were a key means of developing new and important software features. There was no specific office space allocated for special projects.

**COST ALLOCATION**

The challenge facing HSS was how to allocate costs to the three lines of service so that each could be competitively priced.

The company did not have a standard costing system. Direct materials and licences were charged to the service area that incurred the costs. The actual direct materials costs in 2016 had been allocated as $23,000 for software development, $35,000 for professional services, and $4,500 for special projects. Direct labour hours for the software developers and client service representatives were tracked using time tracking software and assigned directly to the business lines (see Exhibit 2).

Under HSS’s old costing setup, indirect labour costs were not allocated to the business lines. But to be profitable and to properly price the company’s software licences, the company needed to allocate indirect costs to the appropriate business lines. HSS considered three possible cost drivers for its indirect costs: the number of staff performing each task, the indirect labour hours, and the space occupied by each service area. The use of each of these potential cost drivers is outlined in Exhibit 2.

Service overhead included salary for the supervisor of the software development, all outsourced development costs, and depreciation for the equipment (see Exhibit 1). The supervisor of the development staff worked a standard eight-hour day and received 15 days (120 hours) of vacation and 12 days (96 hours) of statutory holidays. The maximum number of hours that the supervisor worked was 1,864 in a given year (see Exhibit 3).

Administration overhead included salaries for the three senior executives in the company, generic software licences, marketing and travel, office expenses, and utilities (see Exhibit 1). The senior executives had fixed salaries, and each worked the same number of hours (1,864) per year (see Exhibit 3). The office footprint for the executives totalled 40 square metres.

The company also had some key performance data from 2015: the projected number of licences for the year, the number of new clients and special projects, and the number of labour hours available for the supervisor of software development and for the corporate administrative (executive) personnel (see Exhibit 3). The number of available labour hours was net of vacation days and statutory holidays.

**PRICING LANDSCAPE**

While HSS was enjoying first mover status within the industry, the market for its software was starting to warm up and competitors were seeing an opportunity. HSS’s software addressed a specific need but it could be easily replicated by another company; thus, HSS needed to be careful with how it issued its new licences. For small and medium-sized facilities that needed only a limited number of licences, a per-use licence model, also known as “software as a service” (SAAS), made sense because the cost of the licence was not prohibitive to operating budgets. For large hospitals or LHINs, where many licences were required, the SAAS model was simply cost prohibitive. For most medical software, a markup of anywhere from 100 to 300 per cent was the norm in the industry.

Professional services was an area where HSS wanted to provide quality service at a reasonable price. The company was considering either a cost recovery approach or a cost-plus strategy. For cost plus, the norm was typically cost plus 20 to 50 per cent.

Finally, the company wanted to make special projects an attractive option for existing subscribers because once one customer asked for something and paid for it, HSS could bundle the new capability with its existing software. The norm for pricing new development was 200 per cent of cost.

**DECISION**

Before any discussion about price could happen, the consultant Stevens had hired needed to identify costs as either direct or indirect and allocate those costs to the three services. Then the consultant could complete a cost allocation spreadsheet (see Exhibit 4) and take the completed analysis to the senior executive team to discuss pricing options.

**Exhibit 1: Health Services Software, Operating Budget**

|  |  |  |
| --- | --- | --- |
| **Cost Item** | **in CA$** | **Notes** |
| Salaries |  |  |
| Senior executives (3) | 320,000 | Salaries for HSS executives |
| Software development supervisor (1) | 85,000 | Salary for supervisor of all software development |
| Software developers (4) | 280,000 | Salaries for software development |
| Client service representatives (2) | 130,000 | Salaries for installation services and client support |
| Outsourcing contracts | 12,000 | Software development outsourced to other companies |
| Depreciation on equipment | 6,500 | Annual straight-line depreciation for equipment |
| Software licences | 20,000 | General licences for software used by the entire company |
| Materials and licences | 62,500 | Material and software licences specific to individual clients |
| Marketing and travel | 73,000 | Promotion of HSS and travel to locations for new installations and support |
| Office expenses | 37,000 | General operating expenses at HSS |
| Utilities | 24,000 | All utilities: electricity, heat, water |
| Total Cost | 1,050,000 |  |

Note: HSS = Health Services Software.

Source: Company documents.

**Exhibit 2: Health Services Software, Cost Allocation Data**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Software Development** | **Professional Services** | **Special Projects** | **Office** |
| **Direct Labour** (tracked with time sheets) | | | | |
| Software developers (4) | 70% | 10% | 20% |  |
| Client service representatives (2) | 10% | 90% | 0% |  |
| **Indirect Labour Hours** | | | | |
| Service overhead: software development supervisor (1) | 1,584 | 93 | 187 |  |
| Administration: senior executives (3) | 3,914 | 1,618 | 60 |  |
| **Number of Staff** | | | | |
| Software developers (4) | 4 |  |  |  |
| Client service representatives (2) |  | 2 |  |  |
| **Physical Layout** | | | | |
| Square metres | 250 | 40 |  | 40 |

Source: Company documents.

**Exhibit 3: Health Services Software, Key Performance Data**

|  |  |
| --- | --- |
| Number of software licences | 1,200 |
| Number of new clients | 3 |
| Number of special projects | 5 |
| Service overhead: software development supervisor (hours) | 1,864 |
| Administration: senior executives (hours) | 5,592 |
| Company footprint (square metres) | 330 |

Source: Company documents.

**Exhibit 4: Cost Allocation Worksheet**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| in CA$ | **Total** | **Software Development** | **Professional Services** | **Special Projects** |  |
| **Direct Costs** |  |  |  |  |  |
| Cost 1 |  |  |  |  |  |
| Cost 2 |  |  |  |  |  |
| Cost 3 |  |  |  |  |  |
| Total direct costs |  |  |  |  |  |
| **Service Overhead** |  |  |  |  |  |
| Cost 1 |  |  |  |  |  |
| Cost 2 |  |  |  |  |  |
| Cost 3 |  |  |  |  |  |
| Total service overhead |  |  |  |  |  |
| **Administration** |  |  |  |  |  |
| Cost 1 |  |  |  |  |  |
| Cost 2 |  |  |  |  |  |
| Cost 3 |  |  |  |  |  |
| Total administration |  |  |  |  |  |
| Total Cost |  |  |  |  |  |
|  |  |  |  |  |  |
| **Overhead Application Rate** | **Per Hour** | **Software Development** | **Professional Services** | **Special Projects** | **Total** |
| Total service overhead rate |  |  |  |  |  |
| Total administration rate |  |  |  |  |  |
| Total overhead application rate |  |  |  |  |  |

Source: Created by the case author.

1. All dollar amounts are in Canadian dollars unless otherwise specified. [↑](#footnote-ref-1)