Development Effort Estimation for Spa Scheduling Service

The effort needed to create the web-based application for scheduling spa treatments is represented by the following as a rough estimate. It is based on the concept of use case points and mainly relies on assessments of the relative complexity pertaining to the various application components. Like with any estimate, it might vary if more exact, recent data become available.

1. Unadjusted Actor Weight

No	Actor	Classification	Weight
1	Customers	Complex	3
2	Spa Staff	Complex	3
3	Customer Support	Average	2
4	Payment Processor	Average	2
	Unadjusted Actor Weight (UAW)		**10**

2. Unadjusted Use Case Weight

No	Use Case	Classification	Weight
UC. 1	Customer login	Average	10
UC. 2	Account update	Average	10
UC. 3	Account closure	Simple	5
UC. 4	Selection of Service	Complex	15
UC. 5	Updating of Services	Average	10
UC. 6	Cancellation of Services	Complex	15
UC. 7	Booking Service	Average	10
UC. 8	Process Payment	Average	10
UC. 9	Email confirmation of Payment	Simple	5
UC. 10	Booking Confirmation through email	Simple	5
UC. 11	Inquiries	Average	10
UC. 12	Service sales report	Average	10
UC. 13	Appointment Report	Simple	5
	Unadjusted Use Case Weight (UUCW)		**120**

3. Unadjusted Use Case Points

UUCP = UAW +UUCW
= 10 + 120
= 130

4. Technical Complexity

No	Technical Factor	Weight	Complexity	Contribution
T1	Distributed System	2	4	8
T2	Performance	1	3	3
T3	End-user Efficiency	1	3	3
T4	Complex processing	1	2	2
T5	Reusable code	1	2	2
T6	Easy to use	0.5	2	1.0
T7	Portable	2	3	6
T8	Easy to change	1	5	5
T9	Concurrent	1	4	4
T10	Security features	1	4	4
T11	Access for third parties	1	4	4
T12	Special training required	1	1	1
	Total Technical Factor			43

TCF = 0.60 + 0.01 * ∑i Wi * ti

= 0.60 + 0.01 * (43)

= 0.60 + 0.43

= 1.03

5. Environment Complexity

No	Environment Factor	Weight	Complexity	Contribution
E1	Familiarity with RUP/UML	1.5	1	1.5
E2	Part-time workers	1	5	5
E3	Lead analyst capability	0.5	3	1.5
E4	Application experience	0.5	2	1.0
E5	Object-oriented experience	1	3	3
E6	Motivation	1	3	3
E7	Difficult programming language	-1	2	-2
E8	Stable requirements	2	4	8
	Total Environment Factor			21

ECF = 1.40 – 0.03 * ∑i Wi * ti

= 1.40 – 0.03 * 21

= 0.77

6. **Use Case Points & Efforts**

UCP = UUCP * TCF * ECF

= 130 * 1.03 * 0.77

= 103.10

This equates to approximately 1718 person-hours, 52 person weeks, or a year and four weeks of development efforts, assuming a 20-hour average per use case point. Using the costing data, a tentative budget for the application may be calculated. Based on previous experience, different businesses apply a different multiplier for each use case point.