Tugas 3 PDIB: AHP
Oleh: Muhammad Iqbal Asrif (2004673945)

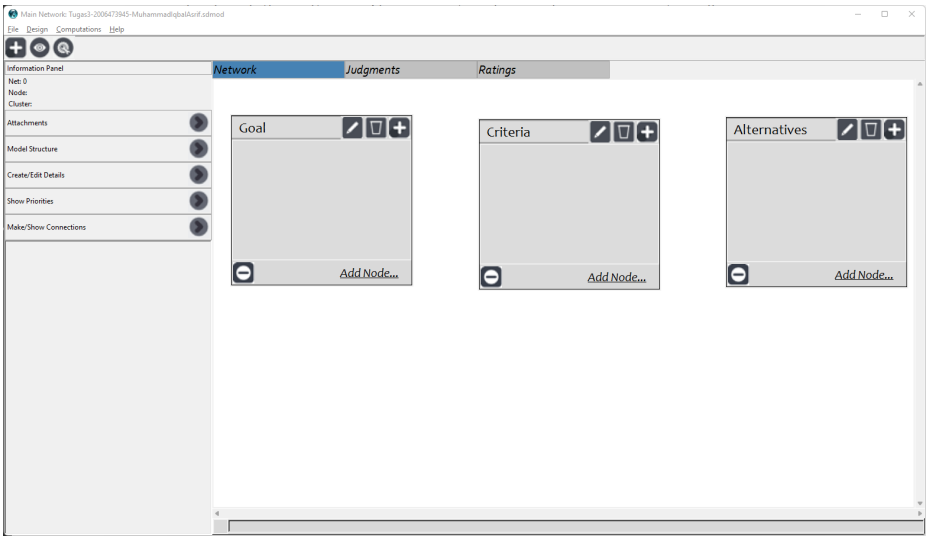
1. Pemilihan opsi terbaik dengan intuisi

Dilakukan pengumpulan requirement perusahaan terlebih dahulu atas ke-5 kriteria yang ada,

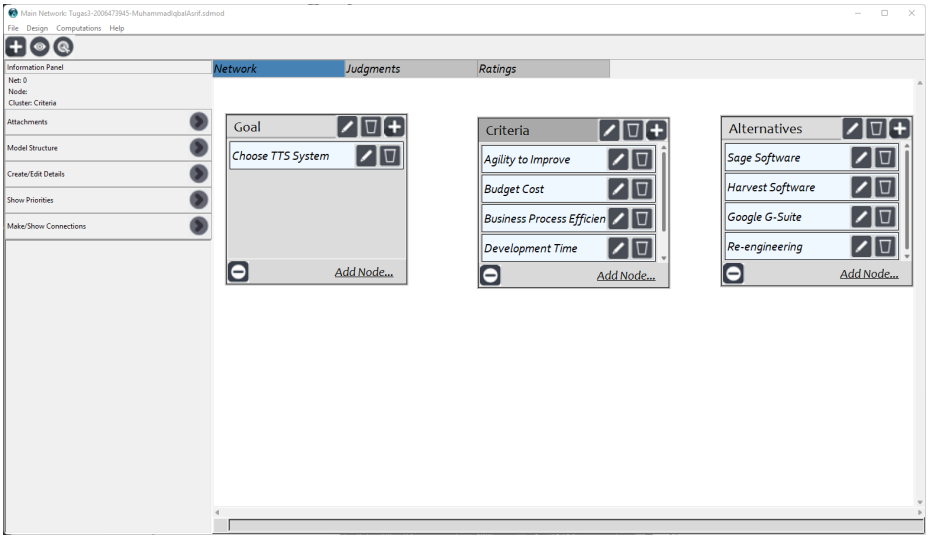
- Budget Cost: Prioritas medium, karena memahami pentingnya investasi untuk solusi yang tepat. Mengurangi biaya initial dan ongoing maintenance, tapi higher maintenance costs dapat dipahami apabila benefits jauh lebih tinggi.
- Development Time: Minimizing downtime dalam transition
- Agility to Improve: Scalable. Tidak membutuhkan major business reengineering. Future and ongoing maintenance.
- Business Process Efficiency: Memenuhi kebutuhan fungsional perusahaan. Forepersons tidak mahir teknologi sehingga harus mudah digunakan dan memiliki support yang jelas. Punya kontrol input yang kuat untuk memastikan akurasi informasi.
- Possibility to Integration: Wajib bisa terintegrasi dengan QuickBooks

Dilakukan pengurutan kriteria atas urgensinya bagi perusahaan
Possibility to Integration -> Business Process Efficiency -> Development Time -> Agility to Improve -> Development Time -> Budget Cost
Untuk kriteria Possibility to Integration, Customized Information System Solution tidak dapat melakukan integrasi dengan QuickBooks. Berdasarkan exhibit 8, off-the-shelf software dan re-engineering memenuhi kriteria Business Process Efficiency. Pada aspek Agility to Improve, Re-engineering akan memiliki hambatan pada proses maintenance. Oleh karena itu, dipilih Off-The-Shelf packages.
Terdapat dua pilihan Off-The-Shelf packages, yaitu Sage dan Harvest. Berdasarkan aspek Agility to Improve dan Budget Cost, Sage memiliki keunggulan dengan harga $192 per year + $7/user/month dibandingkan dengan Harvest yang memiliki harga $12/user/month. Oleh karena itu, dipilih **Sage Time Tracking Software Package**.

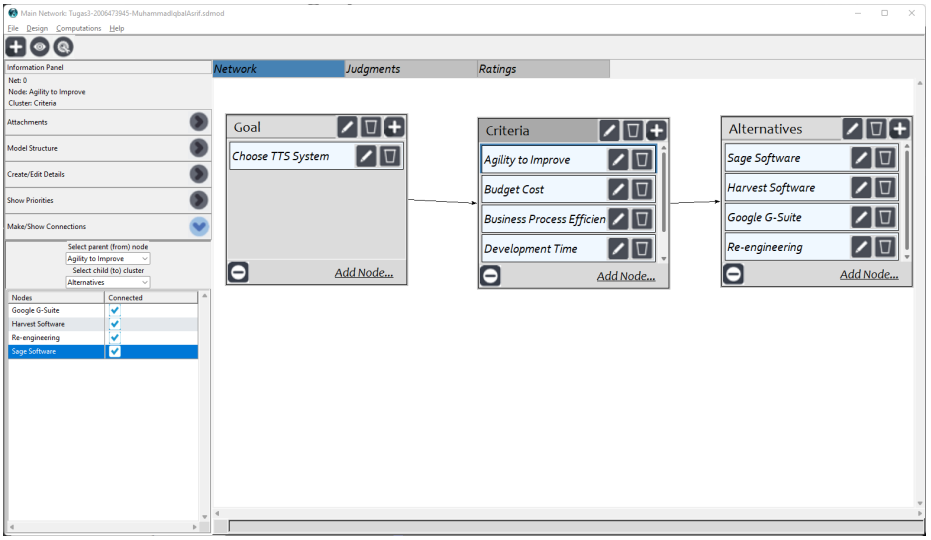
2. Pemilihan opsi terbaik dengan AHP
    a. Pembuatan Cluster Goal-Criteria-Alternatives

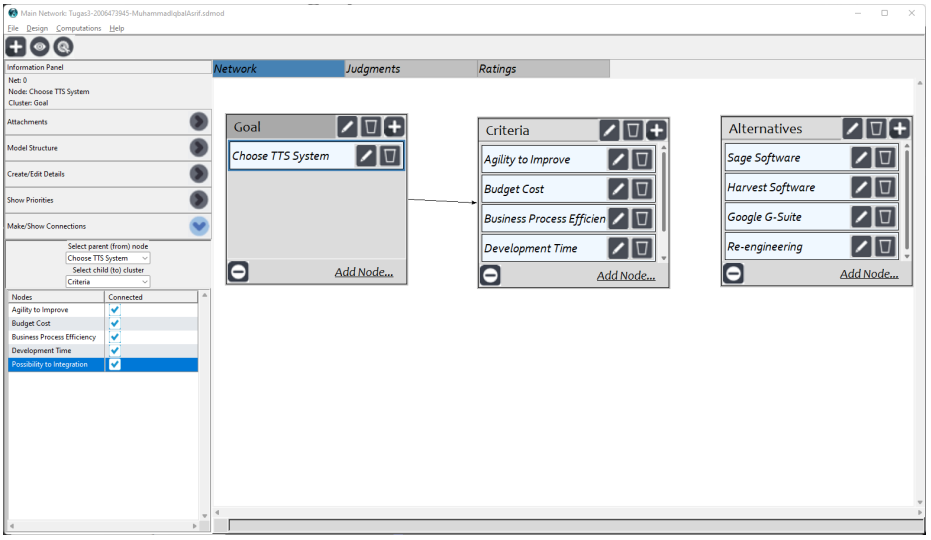


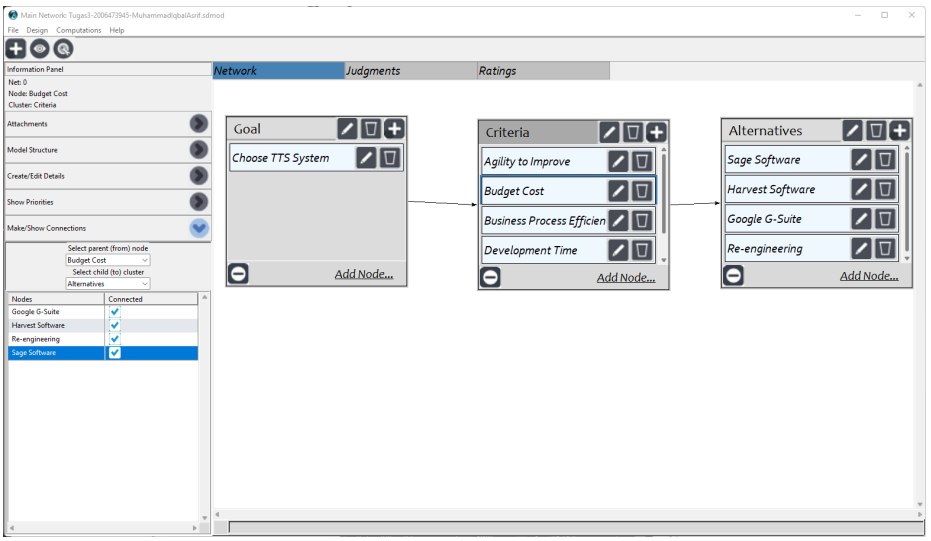
b. Pengisian node masing-masing cluster

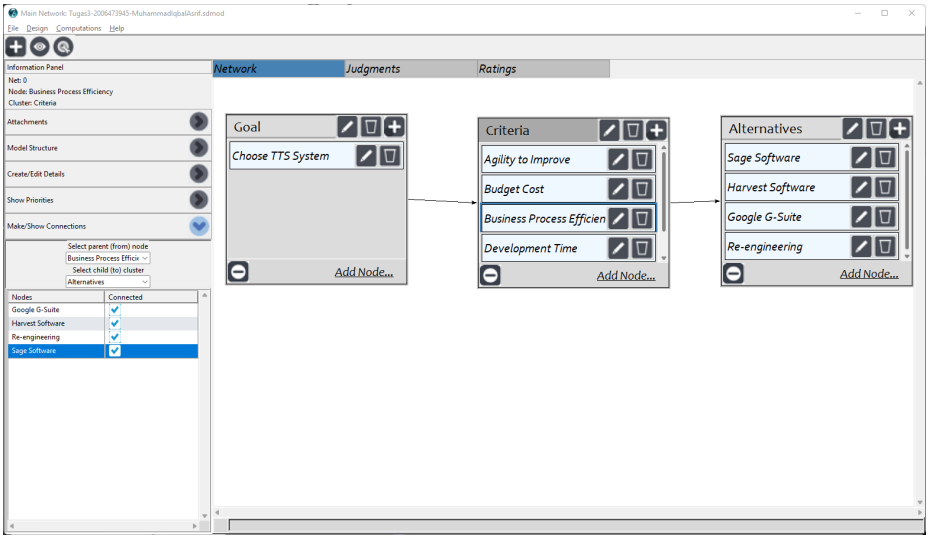



c. Pembuatan koneksi antar node




Main Network: Tugas3-2006473945-MuhammadIqbalAsrif.sdmod
File Design Computations Help
Information Panel
Net: 0
Node: Budget Cost
Cluster: Criteria
Attachments
Model Structure
Create/Edit Details
Show Priorities
Make/Show Connections
Select parent (from) node
Budget Cost
Select child (to) cluster
Alternatives
Nodes
Connected
Google G-Suite
Harvest Software
Re-engineering
Sage Software
Network
Judgments
Ratings
Goal
Choose TTS System
Add Node...
Criteria
Agility to Improve
Budget Cost
Business Process Efficien
Development Time
Add Node...
Alternatives
Sage Software
Harvest Software
Google G-Suite
Re-engineering
Add Node...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File Design Computations Help
Information Panel
Net: 0
Node: Business Process Efficiency
Cluster: Criteria
Attachments
Model Structure
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Select parent (from) node
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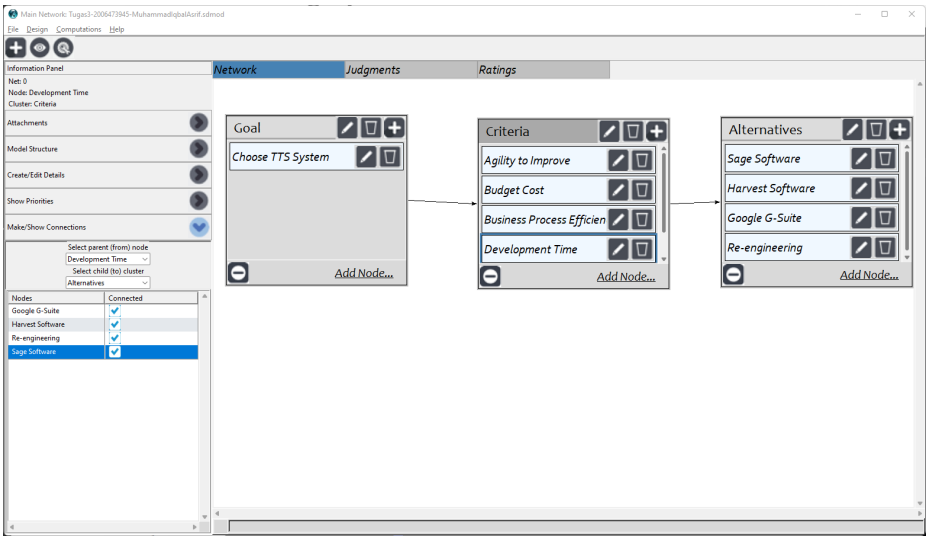
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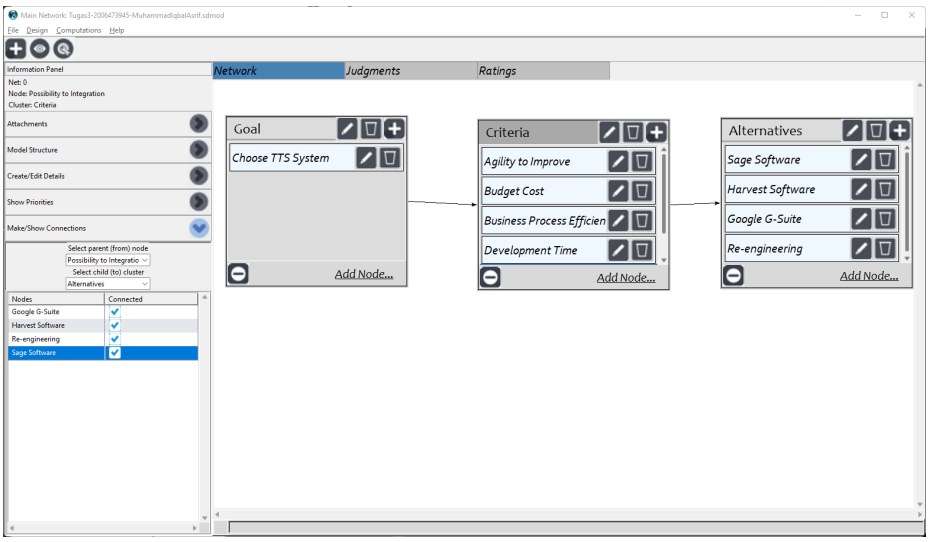
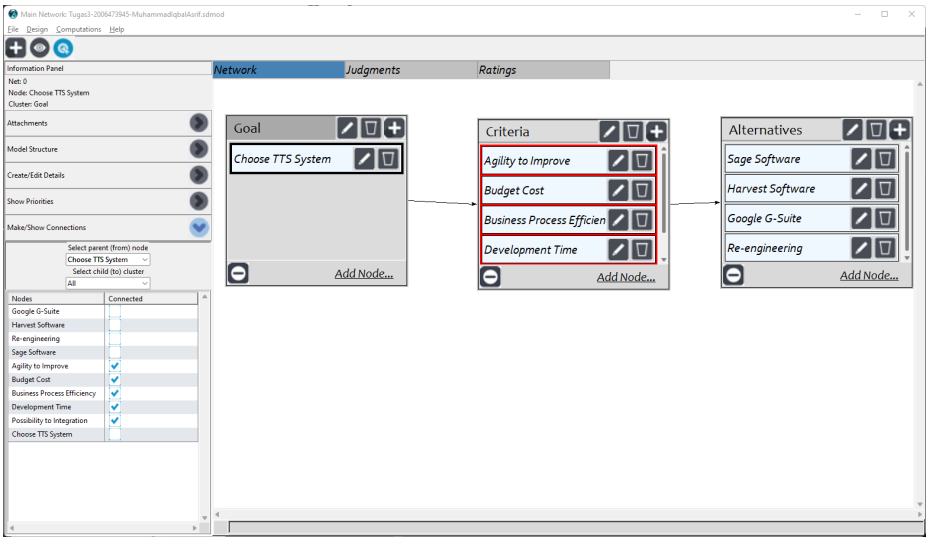
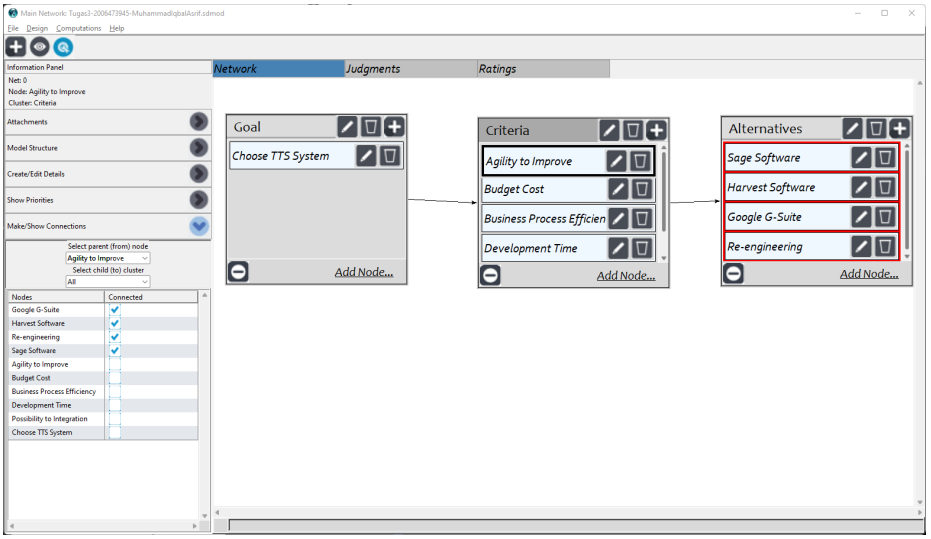
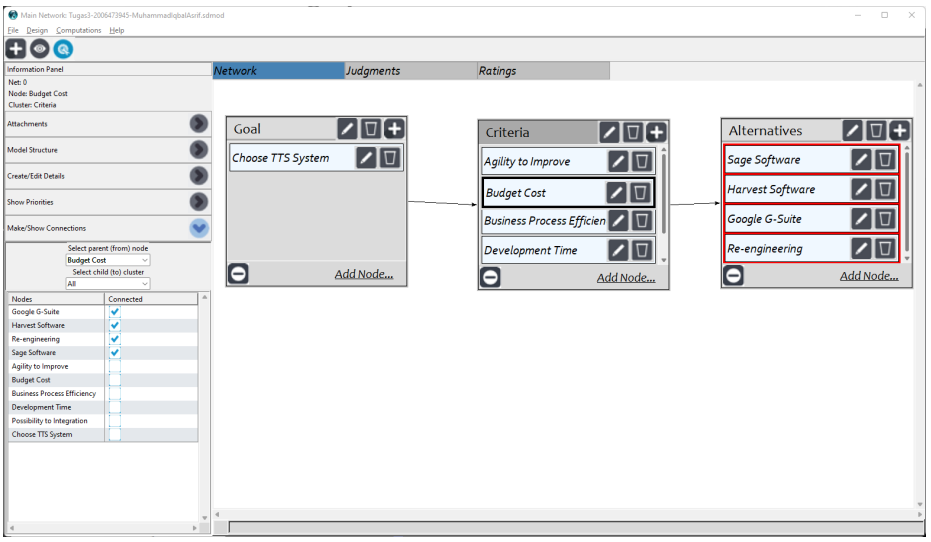



d. Pengecekan koneksi antar node

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Node: Budget Cost
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Select child (to) cluster
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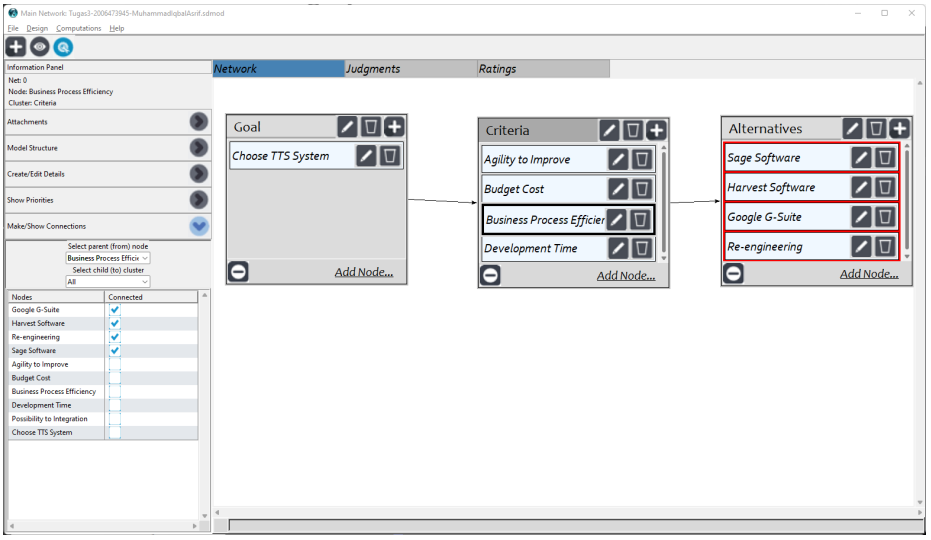
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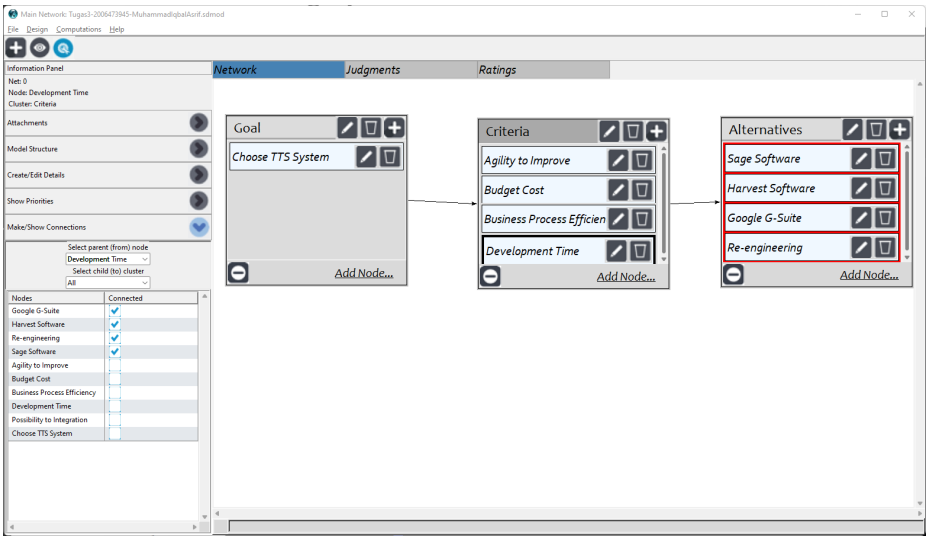
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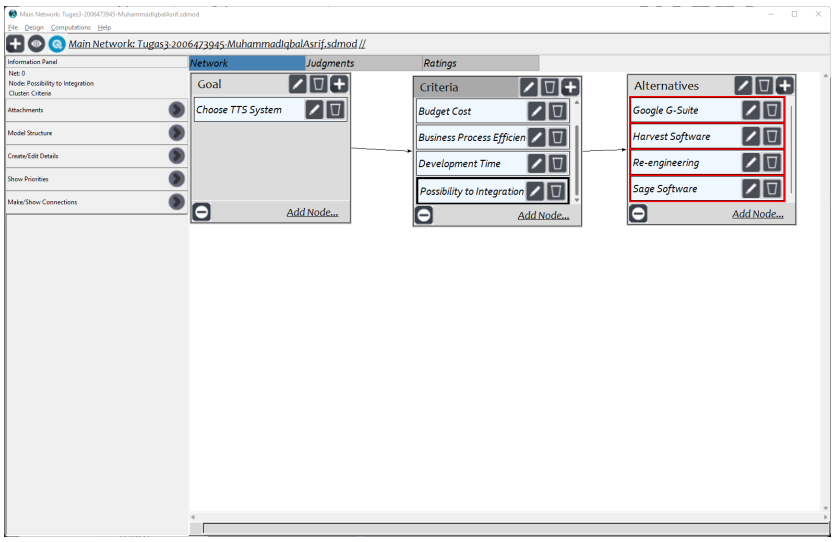
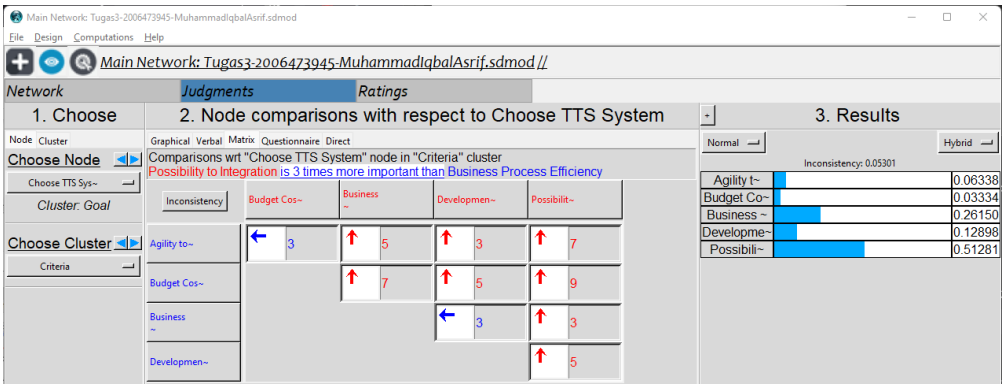
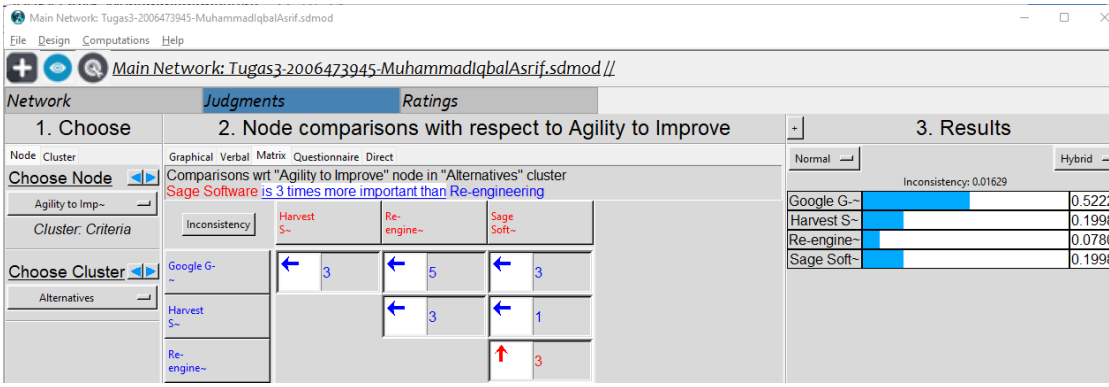



e. Pemberian skor dengan matriks

Parent Node: Pemilihan TTS

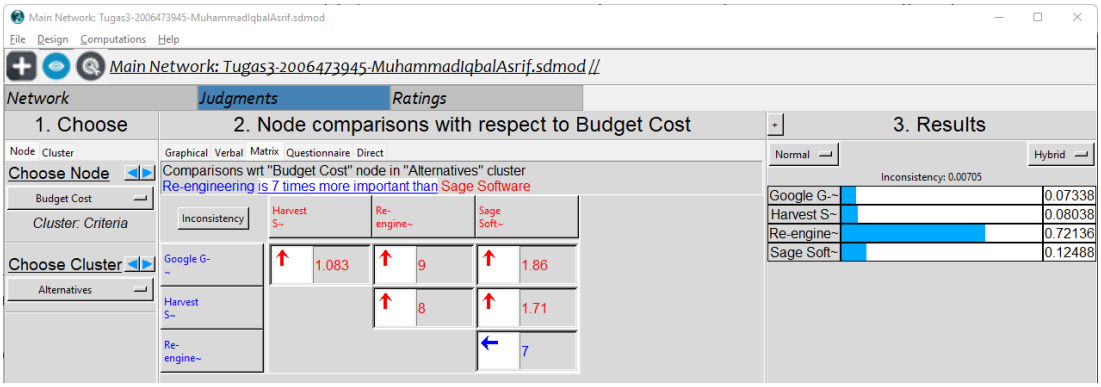



Parent Node: Agility to Improve



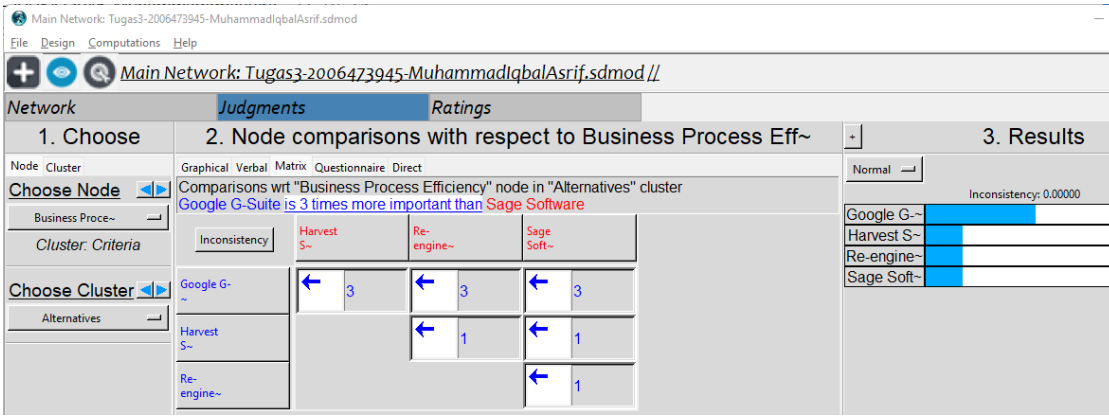

Google G-Suite paling unggul karena memungkinkan customization sesuai kebutuhan (Exhibit 8 nomor 2 poin 5). Harvest dan Sage kedua karena vendor akan terus melakukan upgrade berkala (Exhibit 8 nomor 1 poin 4). Re-engineering terakhir karena setiap ada perubahan perlu integrasi kembali (Exhibit 8 nomor 3 poin 5 dan 8)

Parent Node: Budget Cost



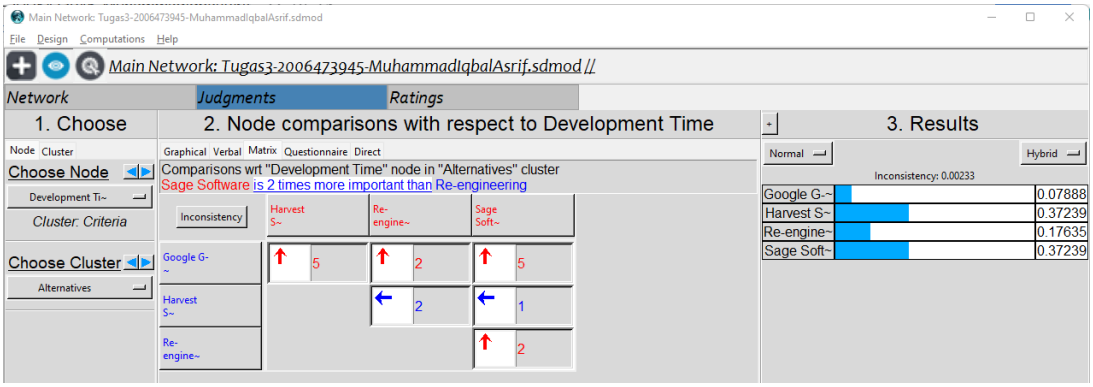

Disusun berdasarkan data yang tertera pada exhibit 8. Re-engineering membutuhkan biaya paling sedikit (Exhibit 8 nomor 3 poin 5). Sage software 1.86 kali lebih mudah daripada kustomisasi Google G-Suite (Exhibit 8 nomor 1a dan 2). Sage software 1.71 kali lebih murah daripada Harvest software (Exhibit 8 nomor 1a dan 1b). Harvest software 1.083 kali lebih murah daripada kustomisasi Google G-Suite (Exhibit 8 nomor 1b dan 2)

Parent Node: Business Process Efficiency



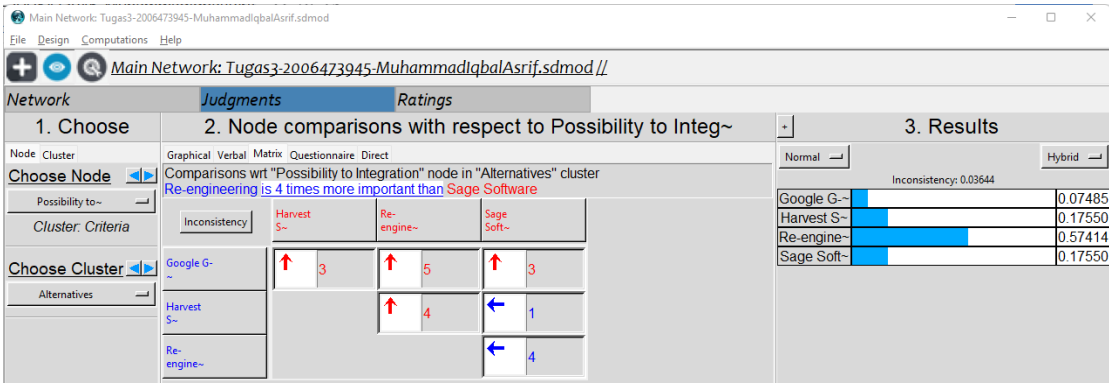

Berdasarkan tinjauan kriteria efisiensi proses bisnis. Customisasi paling efisien karena dapat fokus kepada kebutuhan pokok saja (Exhibit 8 no 3 poin 3). Off-The-Shelf dan Re-engineering memiliki nilai sama karena terdapat trade-off antara support untuk pekerja lapangan dengan fungsi program.

Parent Node: Development Time




Ditentukan berdasarkan kecepatan implementasi. Off-the-self software memiliki kecepatan implementasi terbaik (Exhibit 8 nomor 1 poin 1). Rekayasa ulang no 2 karena fokus pada proses yang bermasalah saja (Exhibit 8 nomor 3 poin 1). Customisasi Google G-Suite terakhir karena akan memakan waktu lebih lama dari yang diekspektasikan (Exhibit 8 nomor 2 poin 1 dan 8)

Parent Node: Possibility to Integration

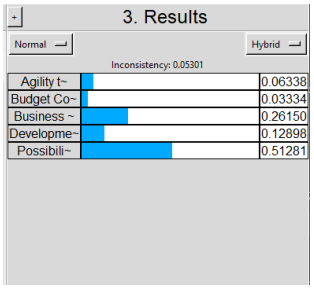



Berdasarkan kriteria kemampuan sistem untuk dapat terintegrasi dengan sistem yang ada. Rekayasa ulang dapat terintegrasi dengan Quickbooks dan Google G-Suite (Exhibit 8 nomor 3 poin 4). Harvest dan Sage dapat terintegrasi dengan QuickBooks (Exhibit 8 nomor 1a dan 1b). Google G-Suite tidak dapat terintegrasi dengan QuickBooks (Exhibit 8 nomor 2 poin 11 dan 12)

f. Besaran inkonsistensi pertama

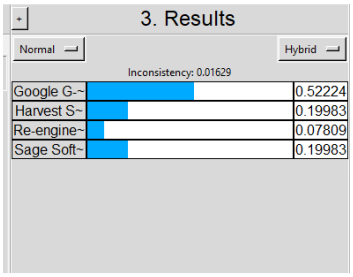
Parent Node: Pemilihan TTS

Nilai Inkonsistensi: 0.05301



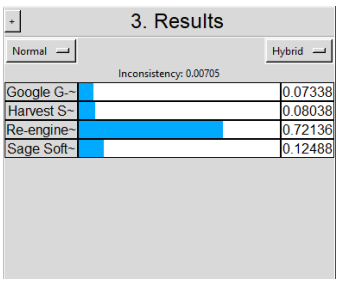

Parent Node: Agility to Improve

Nilai Inkonsistensi: 0.01629



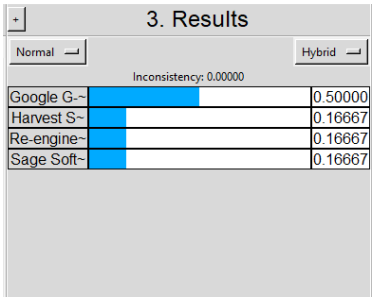

Parent Node: Budget Cost

Nilai Inkonsistensi: 0.00705



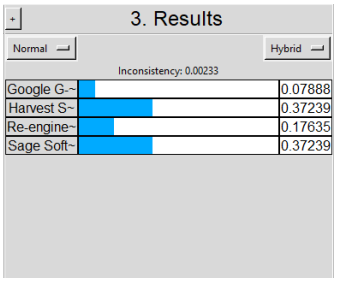

Parent Node: Business Process Efficiency

Nilai Inkonsistensi: 0.0



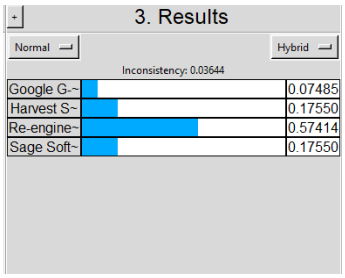

Parent Node: Development Time

Nilai Inkonsistensi: 0.00233




Parent Node: Possibility to Integration

Nilai Inkonsistensi: 0.03644



g. Perbaikan nilai inkonsistensi
Tidak ada nilai inkonsistensi diatas 0.1, sehingga tidak perlu ada perbaikan yang dilakukan

h. Nilai inkonsistensi setelah perbaikan
Parent Node: Pemilihan TTS
Nilai Inkonsistensi: 0.05301

Parent Node: Agility to Improve
Nilai Inkonsistensi: 0.01629

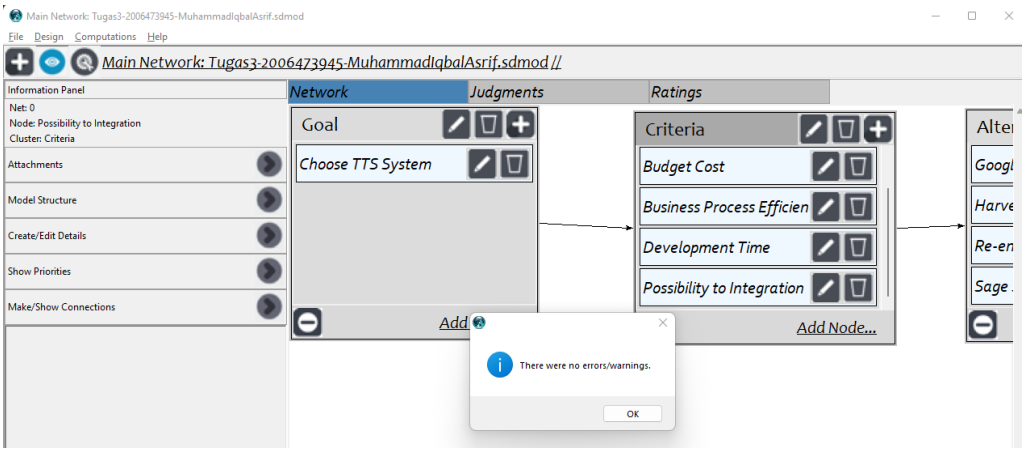
Parent Node: Budget Cost
Nilai Inkonsistensi: 0.00705

Parent Node: Business Process Efficiency
Nilai Inkonsistensi: 0.0

Parent Node: Development Time
Nilai Inkonsistensi: 0.00233

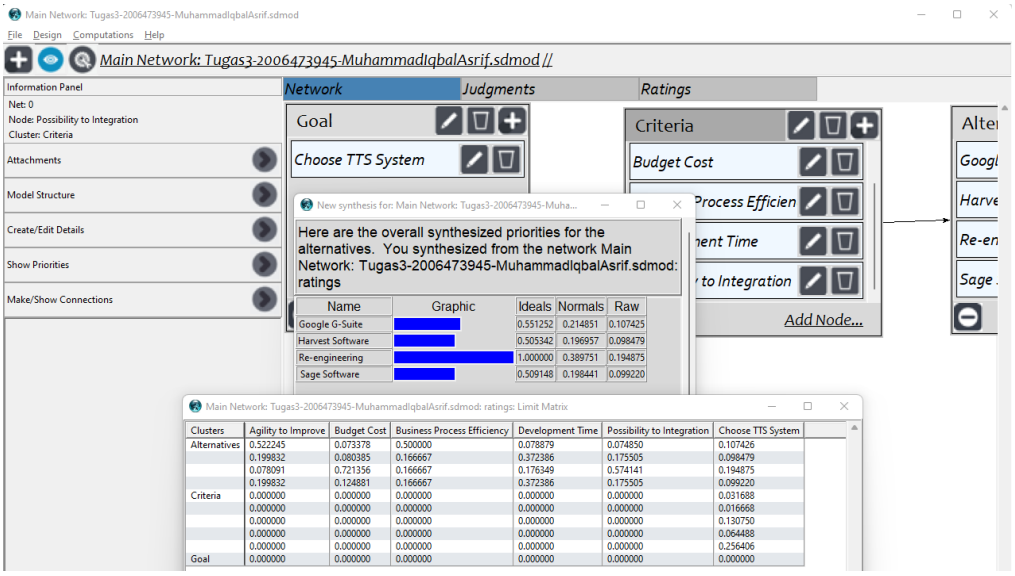
Parent Node: Possibility to Integration
Nilai Inkonsistensi: 0.03644

i. Sanity Check



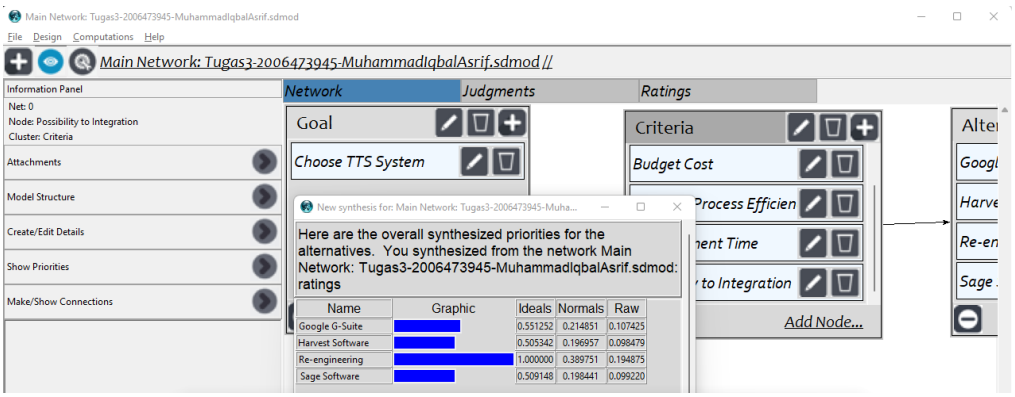

Tidak ada error. Perbandingan sudah lengkap

j. Perbandingan sintesis hasil akhir dengan limit matriks




Terlihat kolom raw sintesis sama dengan nilai pada limit matrix

k. Alternatif TTS berdasarkan AHP




Berdasarkan hasil sintesis dipilih re-engineering